APPENDIX G

FOURTH QUARTER 2011 ANALYTICAL LABORATORY REPORTS, CHAIN-OFCUSTODY, AND VALIDATION REPORTS

APPENDIX G

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Section No.

APPENDIX G

Section 1

Outfall 009 – October 5, 2011

MEC^X Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: IUJ0496

Prepared by

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

I. INTRODUCTION

Task Order Title:	Boeing SSFL NPDES
Contract Task Order:	1261.100D.00
Sample Delivery Group:	IUJ0496
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 (Composite)	IUJ0496-02	8691-001, G1J080434-001	Water	10/5/2011 5:54:00 PM	314.0, 900. 901.1, 903.1, 904, 905, 906, EPA 245.1, EPA 245.1 Diss, 1613B, SM 2540D, ASTM D5174

II. Sample Management

No anomalies were observed regarding sample management. The samples were received above the temperature limit at TestAmerica-Irvine, as the samples had insufficient time to cool in transit from the field. The samples in this SDG were received at TestAmerica-West Sacramento within the temperature limits of 4°C ±2°C. Eberline did not note the temperature upon receipt; 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 TestAmerica-West Sacramento and Eberline. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

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

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: L. Calvin
Date Reviewed: November 14, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review* (8/02).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.

- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.

    - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.

    - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.

- Calibration: Calibration criteria were met.

    - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs ≤20% for the 15 native compounds (calibration by isotope dilution) and ≤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 above the EDL for 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, total HxCDF, and OCDD. 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, and total HxCDF were not detected in the associated sample. The concentration for OCDD in the method blank was insufficient to qualify the sample result for OCDD.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613, and RPDs were within the laboratory control limit of ≤50%.

- 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 internal standard recoveries for 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 any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Individual isomers reported as EMPCs were qualified as estimated nondetects, "UJ," at the level of the EMPC. The total for HpCDF consisted only of the individual isomer qualified as an EMPC, and was therefore also qualified as an estimated nondetect, "UJ." The total for HpCDD was qualified as an estimated detect, "UJ," 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: November 14, 2011

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 245.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

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

- Tuning: Not applicable to this analysis.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were ≥0.995 and all initial and continuing calibration recoveries were within 85-115%. CRI recoveries were within the control limits of 70-130%.

- Blanks: Method blanks and CCBs had no detects.

- Interference Check Samples: Not applicable to this analysis.

- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits.

- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: 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: November 14, 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. All remaining aliquots were preserved within five days of collection and analyzed within 180 days of collection.

- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

  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. 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. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

- 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: November 14, 2011

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Methods 314.0 and SM2540D*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: Analytical holding times, seven days for TSS and 28 days for perchlorate, were met.

- Calibration: Calibration criteria were met. All Initial calibration r^2 values were $\geq$0.995. The perchlorate IPC-MA recovery was above the control limit at 121%; however, perchlorate was not detected in the site sample. The ICCS recovery was within 75-125% and the ICV and CCV recoveries were within 85-115%. The balance calibration check logs were acceptable.

- Blanks: The method blanks and CCBs had no detects.

- Blank Spikes and Laboratory Control Samples: The TSS recovery was within laboratory-established QC limits. Perchlorate recoveries were within 85-115%.

- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG for perchlorate. 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 IUJ0496

Analysis Method 900

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	1.49	3	0.327	pCi/L	Jb	J	DNQ
Gross Beta	12587472	2.95	4	0.798	pCi/L	Jb	J	DNQ

Analysis Method 901.1

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	1.06	pCi/L	U	U	
Potassium-40	13966002	ND	25	13	pCi/L	U	U	

Analysis Method 903.1

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.219	1	0.703	pCi/L	U	U	

Analysis Method 904

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.062	1	0.382	pCi/L	U	U	

Analysis Method 905

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.047	2	0.824	pCi/L	U	U	

Analysis Method 906

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-66.2	500	206	pCi/L	U	U	

Analysis Method ASTM 5174-91

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total	NA	0.07	1	0.022	pCi/L	Jb		

Analysis Method EPA 245.1

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 PM

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

Analysis Method EPA 245.1-Diss

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 PM

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

Analysis Method EPA 314.0

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797-73-0	ND	4.0	0.95	ug/l		U	

Analysis Method EPA-5 1613B

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 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	2.5e-005	0.00005	0.0000055	ug/L	J	J	DNQ
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000073	ug/L	J, Q	UJ	*III
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.00001	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000064	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.000008	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000064	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000072	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000054	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.000009	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.000012	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.000014	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000072	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.000016	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000043	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000053	ug/L		U	
OCDD	3268-87-9	0.00023	0.0001	0.000017	ug/L	B		
OCDF	39001-02-0	ND	0.0001	0.00001	ug/L	J, Q	UJ	*III
Total HpCDD	37871-00-4	5.1e-005	0.00005	0.0000055	ug/L	J, Q	J	DNQ, *III
Total HpCDF	38998-75-3	ND	0.00005	0.0000085	ug/L	J, Q	UJ	*III
Total HxCDD	34465-46-8	ND	0.00005	0.0000054	ug/L		U	
Total HxCDF	55684-94-1	ND	0.00005	0.0000072	ug/L		U	
Total PeCDD	36088-22-9	ND	0.00005	0.000012	ug/L		U	
Total PeCDF	30402-15-4	ND	0.00005	0.000014	ug/L		U	
Total TCDD	41903-57-5	ND	0.00001	0.0000043	ug/L		U	
Total TCDF	55722-27-5	ND	0.00001	0.0000053	ug/L		U	

Analysis Method SM 2540D

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUJ0496-02 **Sample Date:** 10/5/2011 5:54:00 PM

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 2

Outfall 009 – October 5, 6, & 7, 2011

Test America Analytical Laboratory Report

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

LABORATORY REPORT

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

Project: Semi-Annual Outfall 009

Sampled: 10/05/11-10/07/11
Received: 10/05/11
Issued: 10/31/11 11:32

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

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 7°C, on ice and with chain of custody documentation.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis. Results were qualified where the sample container did not meet the method preservation requirements. Cyanide bottle was received unpreserved. Sample was adjusted to ph >12 before analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	No significant observations were made.
SUBCONTRACTED:	Refer to the last page for specific subcontract laboratory information included in this report.

TestAmerica Irvine

Debby Wilson
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

Project ID: Semi-Annual Outfall 009
Report Number: IUJ0496

Sampled: 10/05/11-10/07/11
Received: 10/05/11

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.

Some analytes are reported at a concentration below the estimated detection limit (EDL). The data is reported as a positive detection because the peaks elute at the correct retention time for both characteristic ions and have a signal to noise ratio greater than the method required 2.5:1.

The internal standard recoveries for 13C-1,2,3,4,7,8-HxCDD, 13C-1,2,3,4,6,7,8-HpCDF and 13C-1,2,3,4,7,8,9-HpCDF in the method blank (MB) are below the method criteria. Data quality is not considered affected if the internal standard signal-to-noise ratio is greater than 10:1, which is achieved for all internal standards in the MB. All detection limits are below the lower calibration limit and there is no adverse impact on data quality.

LABORATORY ID	CLIENT ID	MATRIX
IUJ0496-01	Outfall 009 (Grab)	Water
IUJ0496-02	Outfall 009 (Composite)	Water
IUJ0496-03	Trip Blank	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:

Debby Wilson

TestAmerica Irvine

Debby Wilson
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

Project ID: Semi-Annual Outfall 009
Report Number: IUJ0496

Sampled: 10/05/11-10/07/11
Received: 10/05/11

HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-01 (Outfall 009 (Grab) - Water)					**Sampled: 10/05/11**				
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	11J2486	1.3	4.8	ND	1	DA	10/20/11	

TestAmerica Irvine

Debby Wilson
Project Manager

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Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Semi-Annual Outfall 009
Report Number: IUJ0496

Sampled: 10/05/11-10/07/11
Received: 10/05/11

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water)					**Sampled: 10/05/11**				
Reporting Units: ug/l									
Mercury	EPA 245.1	11J1828	0.10	0.20	ND	1	DB	10/18/11	
Antimony	EPA 200.8	11J1997	0.30	2.0	**0.57**	1	NH	10/18/11	Ja
Cadmium	EPA 200.8	11J1997	0.10	1.0	ND	1	NH	10/18/11	
Copper	EPA 200.8	11J1997	0.50	2.0	**6.5**	1	NH	10/18/11	
Lead	EPA 200.8	11J1997	0.20	1.0	**2.7**	1	NH	10/18/11	
Thallium	EPA 200.8	11J1997	0.20	1.0	ND	1	NH	10/18/11	

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Report Number: IUJ0496

Sampled: 10/05/11-10/07/11
Received: 10/05/11

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 10/05/11**				
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	11J1450	0.10	0.20	ND	1	db	10/13/11	
Antimony	EPA 200.8-Diss	11J2148	0.30	2.0	**0.65**	1	KB1	10/18/11	Ja
Cadmium	EPA 200.8-Diss	11J2148	0.10	1.0	ND	1	KB1	10/18/11	
Copper	EPA 200.8-Diss	11J2148	0.50	2.0	**6.2**	1	KB1	10/18/11	
Lead	EPA 200.8-Diss	11J2148	0.20	1.0	**0.94**	1	KB1	10/18/11	Ja
Thallium	EPA 200.8-Diss	11J2148	0.20	1.0	ND	1	KB1	10/18/11	

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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 10/05/11**				
Reporting Units: mg/l									
Chloride	EPA 300.0	11J0660	0.30	0.50	**2.6**	1	NN	10/06/11	
Nitrate/Nitrite-N	EPA 300.0	11J0660	0.15	0.26	**0.70**	1	NN	10/06/11	
Sulfate	EPA 300.0	11J0660	0.30	0.50	**6.5**	1	NN	10/06/11	
Total Dissolved Solids	SM2540C	11J1361	1.0	10	**55**	1	MC	10/12/11	
Total Suspended Solids	SM 2540D	11J1120	1.0	10	**6.0**	1	DK1	10/10/11	Ja
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water)					**Sampled: 10/05/11**				
Reporting Units: ug/l									
Perchlorate	EPA 314.0	11J0762	0.95	4.0	ND	1	MN	10/07/11	
Total Cyanide	SM4500CN-E	11J2262	2.2	5.0	ND	1	SLA	10/19/11	M1, pH, P

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Received: 10/05/11

8691

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 10/05/11**				
Reporting Units: pCi/L									
Uranium, Total	8691	8691	0.022	1	**0.07**	1	LS	10/12/11	Jb
Sample ID: IUJ0496-03 (Trip Blank - Water)					**Sampled: 10/07/11**				
Reporting Units: pCi/L									
Uranium, Total	8691	8691	0.022	1	ND	1	LS	10/12/11	U

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Project ID: Semi-Annual Outfall 009
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Sampled: 10/05/11-10/07/11
Received: 10/05/11

900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water)					**Sampled: 10/05/11**				
Reporting Units: pCi/L									
Gross Alpha	900	8691	0.327	3	**1.49**	1	DVP	10/14/11	Jb
Gross Beta	900	8691	0.798	4	**2.95**	1	DVP	10/14/11	Jb
Sample ID: IUJ0496-03 (Trip Blank - Water)					**Sampled: 10/07/11**				
Reporting Units: pCi/L									
Gross Alpha	900	8691	0.297	3	**0.003**	1	DVP	10/14/11	U
Gross Beta	900	8691	0.794	4	**0.008**	1	DVP	10/14/11	U

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Received: 10/05/11

901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water)					**Sampled: 10/05/11**				
Reporting Units: pCi/L									
Cesium-137	901.1	8691	1.06	20	ND	1	LS	10/14/11	U
Potassium-40	901.1	8691	13	25	ND	1	LS	10/14/11	U
Sample ID: IUJ0496-03 (Trip Blank - Water)					**Sampled: 10/07/11**				
Reporting Units: pCi/L									
Cesium-137	901.1	8691	3.06	20	ND	1	LS	10/14/11	U
Potassium-40	901.1	8691	93.3	25	ND	1	LS	10/14/11	U

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Received: 10/05/11

903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water)					**Sampled: 10/05/11**				
Reporting Units: pCi/L									
Radium-226	903.1	8691	0.703	1	**0.219**	1	TM	10/19/11	U
Sample ID: IUJ0496-03 (Trip Blank - Water)					**Sampled: 10/07/11**				
Reporting Units: pCi/L									
Radium-226	903.1	8691	0.742	1	-0.05	1	TM	10/19/11	U

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Sampled: 10/05/11-10/07/11
Received: 10/05/11

904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water)					**Sampled: 10/05/11**				
Reporting Units: pCi/L									
Radium-228	904	8691	0.382	1	**0.062**	1	ASM	10/25/11	U
Sample ID: IUJ0496-03 (Trip Blank - Water)					**Sampled: 10/07/11**				
Reporting Units: pCi/L									
Radium-228	904	8691	0.407	1	-0.216	1	ASM	10/25/11	U

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Received: 10/05/11

905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water)					**Sampled: 10/05/11**				
Reporting Units: pCi/L									
Strontium-90	905	8691	0.824	2	-0.047	1	WL	10/14/11	U
Sample ID: IUJ0496-03 (Trip Blank - Water)					**Sampled: 10/07/11**				
Reporting Units: pCi/L									
Strontium-90	905	8691	1.14	2	-0.015	1	WL	10/14/11	U

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Received: 10/05/11

906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water)					**Sampled: 10/05/11**				
Reporting Units: pCi/L									
Tritium	906	8691	206	500	-66.2	1	WL	10/13/11	U

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EPA-5 1613Bx

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 10/05/11**				
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	1292103	0.0000055	0.00005	**2.5e-005**	0.99	GV	10/20/11	J
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	1292103	0.0000073	0.00005	**8e-006**	0.99	GV	10/20/11	J, Q
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	1292103	0.00001	0.00005	ND	0.99	GV	10/20/11	
1,2,3,4,7,8-HxCDD	EPA-5 1613B	1292103	0.0000064	0.00005	ND	0.99	GV	10/20/11	
1,2,3,4,7,8-HxCDF	EPA-5 1613B	1292103	0.000008	0.00005	ND	0.99	GV	10/20/11	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	1292103	0.0000064	0.00005	ND	0.99	GV	10/20/11	
1,2,3,6,7,8-HxCDF	EPA-5 1613B	1292103	0.0000072	0.00005	ND	0.99	GV	10/20/11	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	1292103	0.0000054	0.00005	ND	0.99	GV	10/20/11	
1,2,3,7,8,9-HxCDF	EPA-5 1613B	1292103	0.000009	0.00005	ND	0.99	GV	10/20/11	
1,2,3,7,8-PeCDD	EPA-5 1613B	1292103	0.000012	0.00005	ND	0.99	GV	10/20/11	
1,2,3,7,8-PeCDF	EPA-5 1613B	1292103	0.000014	0.00005	ND	0.99	GV	10/20/11	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	1292103	0.0000072	0.00005	ND	0.99	GV	10/20/11	
2,3,4,7,8-PeCDF	EPA-5 1613B	1292103	0.000016	0.00005	ND	0.99	GV	10/20/11	
2,3,7,8-TCDD	EPA-5 1613B	1292103	0.0000043	0.00001	ND	0.99	GV	10/20/11	
2,3,7,8-TCDF	EPA-5 1613B	1292103	0.0000053	0.00001	ND	0.99	GV	10/20/11	
OCDD	EPA-5 1613B	1292103	0.000017	0.0001	**0.00023**	0.99	GV	10/20/11	B
OCDF	EPA-5 1613B	1292103	0.00001	0.0001	**1.2e-005**	0.99	GV	10/20/11	J, Q
Total HpCDD	EPA-5 1613B	1292103	0.0000055	0.00005	**5.1e-005**	0.99	GV	10/20/11	J, Q
Total HpCDF	EPA-5 1613B	1292103	0.0000085	0.00005	**8e-006**	0.99	GV	10/20/11	J, Q
Total HxCDD	EPA-5 1613B	1292103	0.0000054	0.00005	ND	0.99	GV	10/20/11	
Total HxCDF	EPA-5 1613B	1292103	0.0000072	0.00005	ND	0.99	GV	10/20/11	
Total PeCDD	EPA-5 1613B	1292103	0.000012	0.00005	ND	0.99	GV	10/20/11	
Total PeCDF	EPA-5 1613B	1292103	0.000014	0.00005	ND	0.99	GV	10/20/11	
Total TCDD	EPA-5 1613B	1292103	0.0000043	0.00001	ND	0.99	GV	10/20/11	
Total TCDF	EPA-5 1613B	1292103	0.0000053	0.00001	ND	0.99	GV	10/20/11	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)					*51 %*				
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)					*48 %*				
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)					*45 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)					*51 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)					*52 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)					*55 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)					*58 %*				
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)					*50 %*				
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)					*47 %*				
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)					*43 %*				
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)					*55 %*				
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)					*42 %*				
Surrogate: 13C-2,3,7,8-TCDD (25-164%)					*51 %*				
Surrogate: 13C-2,3,7,8-TCDF (24-169%)					*48 %*				
Surrogate: 13C-OCDD (17-157%)					*48 %*				
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)					*75 %*				

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SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 009 (Composite) (IUJ0496-02) - Water					
EPA 300.0	2	10/05/2011 17:54	10/05/2011 18:45	10/06/2011 19:30	10/06/2011 20:43
Filtration	1	10/05/2011 17:54	10/05/2011 18:45	10/06/2011 22:24	10/06/2011 22:26

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METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J2486 Extracted: 10/20/11												
Blank Analyzed: 10/20/2011 (11J2486-BLK1)												
Hexane Extractable Material (Oil & Grease)	ND	5.0	1.4	mg/l	DA							
LCS Analyzed: 10/20/2011 (11J2486-BS1)												**MNR1**
Hexane Extractable Material (Oil & Grease)	20.7	5.0	1.4	mg/l	DA	20.0		104	78-114			
LCS Dup Analyzed: 10/20/2011 (11J2486-BSD1)												
Hexane Extractable Material (Oil & Grease)	20.2	5.0	1.4	mg/l	DA	20.0		101	78-114	2	11	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J1828 Extracted: 10/14/11												
Blank Analyzed: 10/18/2011 (11J1828-BLK1)												
Mercury	ND	0.20	0.10	ug/l	DB							
LCS Analyzed: 10/18/2011 (11J1828-BS1)												
Mercury	8.18	0.20	0.10	ug/l	DB	8.00		102	85-115			
Matrix Spike Analyzed: 10/18/2011 (11J1828-MS1)						**Source: IUJ0434-02**						
Mercury	8.38	0.20	0.10	ug/l	DB	8.00	ND	105	70-130			
Matrix Spike Dup Analyzed: 10/18/2011 (11J1828-MSD1)						**Source: IUJ0434-02**						
Mercury	8.28	0.20	0.10	ug/l	DB	8.00	ND	103	70-130	1	20	
Batch: 11J1997 Extracted: 10/17/11												
Blank Analyzed: 10/18/2011 (11J1997-BLK1)												
Antimony	ND	2.0	0.30	ug/l	NH							
Cadmium	ND	1.0	0.10	ug/l	NH							
Copper	ND	2.0	0.50	ug/l	NH							
Lead	ND	1.0	0.20	ug/l	NH							
Thallium	ND	1.0	0.20	ug/l	NH							
LCS Analyzed: 10/18/2011 (11J1997-BS1)												
Antimony	84.0	2.0	0.30	ug/l	NH	80.0		105	85-115			
Cadmium	83.4	1.0	0.10	ug/l	NH	80.0		104	85-115			
Copper	81.7	2.0	0.50	ug/l	NH	80.0		102	85-115			
Lead	83.3	1.0	0.20	ug/l	NH	80.0		104	85-115			
Thallium	83.8	1.0	0.20	ug/l	NH	80.0		105	85-115			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J1997 Extracted: 10/17/11												
Matrix Spike Analyzed: 10/18/2011 (11J1997-MS1)						**Source: IUJ1790-06**						
Antimony	87.3	4.0	0.60	ug/l	NH	80.0	1.55	107	70-130			
Cadmium	79.5	2.0	0.20	ug/l	NH	80.0	ND	99	70-130			
Copper	87.0	4.0	1.0	ug/l	NH	80.0	12.3	93	70-130			
Lead	80.5	2.0	0.40	ug/l	NH	80.0	0.886	100	70-130			
Thallium	81.4	2.0	0.40	ug/l	NH	80.0	0.523	101	70-130			
Matrix Spike Analyzed: 10/18/2011 (11J1997-MS2)						**Source: IUJ1790-07**						
Antimony	88.2	4.0	0.60	ug/l	NH	80.0	1.35	109	70-130			
Cadmium	81.0	2.0	0.20	ug/l	NH	80.0	ND	101	70-130			
Copper	82.0	4.0	1.0	ug/l	NH	80.0	5.34	96	70-130			
Lead	80.3	2.0	0.40	ug/l	NH	80.0	0.489	100	70-130			
Thallium	81.1	2.0	0.40	ug/l	NH	80.0	ND	101	70-130			
Matrix Spike Dup Analyzed: 10/18/2011 (11J1997-MSD1)						**Source: IUJ1790-06**						
Antimony	87.1	4.0	0.60	ug/l	NH	80.0	1.55	107	70-130	0.2	20	
Cadmium	80.0	2.0	0.20	ug/l	NH	80.0	ND	100	70-130	0.6	20	
Copper	88.1	4.0	1.0	ug/l	NH	80.0	12.3	95	70-130	1	20	
Lead	80.8	2.0	0.40	ug/l	NH	80.0	0.886	100	70-130	0.3	20	
Thallium	80.4	2.0	0.40	ug/l	NH	80.0	0.523	100	70-130	1	20	

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Project ID: Semi-Annual Outfall 009
Report Number: IUJ0496

Sampled: 10/05/11-10/07/11
Received: 10/05/11

METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J1450 Extracted: 10/12/11												
Blank Analyzed: 10/13/2011 (11J1450-BLK1)												
Mercury	ND	0.20	0.10	ug/l	db							
LCS Analyzed: 10/13/2011 (11J1450-BS1)												
Mercury	7.51	0.20	0.10	ug/l	db	8.00		94	85-115			
Matrix Spike Analyzed: 10/13/2011 (11J1450-MS1)						**Source: IUJ0486-01**						
Mercury	7.48	0.20	0.10	ug/l	db	8.00	ND	94	70-130			
Matrix Spike Dup Analyzed: 10/13/2011 (11J1450-MSD1)						**Source: IUJ0486-01**						
Mercury	7.38	0.20	0.10	ug/l	db	8.00	ND	92	70-130	1	20	
Batch: 11J2148 Extracted: 10/18/11												
Blank Analyzed: 10/18/2011 (11J2148-BLK1)												
Antimony	ND	2.0	0.30	ug/l	KB1							
Cadmium	ND	1.0	0.10	ug/l	KB1							
Copper	ND	2.0	0.50	ug/l	KB1							
Lead	ND	1.0	0.20	ug/l	KB1							
Thallium	ND	1.0	0.20	ug/l	KB1							
LCS Analyzed: 10/18/2011 (11J2148-BS1)												
Antimony	83.1	2.0	0.30	ug/l	KB1	80.0		104	85-115			
Cadmium	81.4	1.0	0.10	ug/l	KB1	80.0		102	85-115			
Copper	80.7	2.0	0.50	ug/l	KB1	80.0		101	85-115			
Lead	77.9	1.0	0.20	ug/l	KB1	80.0		97	85-115			
Thallium	79.8	1.0	0.20	ug/l	KB1	80.0		100	85-115			

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DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J2148 Extracted: 10/18/11												
Matrix Spike Analyzed: 10/18/2011 (11J2148-MS1)							**Source: IUJ0496-02**					
Antimony	83.3	2.0	0.30	ug/l	KB1	80.0	0.648	103	70-130			
Cadmium	80.0	1.0	0.10	ug/l	KB1	80.0	ND	100	70-130			
Copper	86.0	2.0	0.50	ug/l	KB1	80.0	6.21	100	70-130			
Lead	78.4	1.0	0.20	ug/l	KB1	80.0	0.941	97	70-130			
Thallium	78.7	1.0	0.20	ug/l	KB1	80.0	ND	98	70-130			
Matrix Spike Dup Analyzed: 10/18/2011 (11J2148-MSD1)							**Source: IUJ0496-02**					
Antimony	84.1	2.0	0.30	ug/l	KB1	80.0	0.648	104	70-130	1	20	
Cadmium	82.5	1.0	0.10	ug/l	KB1	80.0	ND	103	70-130	3	20	
Copper	87.9	2.0	0.50	ug/l	KB1	80.0	6.21	102	70-130	2	20	
Lead	80.5	1.0	0.20	ug/l	KB1	80.0	0.941	99	70-130	3	20	
Thallium	81.2	1.0	0.20	ug/l	KB1	80.0	ND	102	70-130	3	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J0660 Extracted: 10/06/11												
Blank Analyzed: 10/06/2011 (11J0660-BLK1)												
Chloride	ND	0.50	0.30	mg/l	NN							
Nitrate/Nitrite-N	ND	0.26	0.15	mg/l	NN							
Sulfate	ND	0.50	0.30	mg/l	NN							
LCS Analyzed: 10/06/2011 (11J0660-BS1)												
Chloride	4.84	0.50	0.30	mg/l	NN	5.00		97	90-110			
Sulfate	9.83	0.50	0.30	mg/l	NN	10.0		98	90-110			
Matrix Spike Analyzed: 10/06/2011 (11J0660-MS1)						**Source: IUJ0598-01**						
Chloride	9.79	0.50	0.30	mg/l	NN	5.00	4.68	102	80-120			
Sulfate	22.0	0.50	0.30	mg/l	NN	10.0	11.6	103	80-120			
Matrix Spike Analyzed: 10/06/2011 (11J0660-MS2)						**Source: IUJ0759-01**						
Chloride	78.5	5.0	3.0	mg/l	NN	50.0	27.0	103	80-120			
Sulfate	193	5.0	3.0	mg/l	NN	100	84.7	108	80-120			
Matrix Spike Dup Analyzed: 10/06/2011 (11J0660-MSD1)						**Source: IUJ0598-01**						
Chloride	9.81	0.50	0.30	mg/l	NN	5.00	4.68	102	80-120	0.2	20	
Sulfate	22.0	0.50	0.30	mg/l	NN	10.0	11.6	104	80-120	0.2	20	
Matrix Spike Dup Analyzed: 10/06/2011 (11J0660-MSD2)						**Source: IUJ0759-01**						
Chloride	78.0	5.0	3.0	mg/l	NN	50.0	27.0	102	80-120	0.7	20	
Sulfate	192	5.0	3.0	mg/l	NN	100	84.7	107	80-120	0.5	20	
Batch: 11J0762 Extracted: 10/07/11												
Blank Analyzed: 10/07/2011 (11J0762-BLK1)												
Perchlorate	ND	4.0	0.95	ug/l	mn							

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J0762 Extracted: 10/07/11												
LCS Analyzed: 10/07/2011 (11J0762-BS1)												
Perchlorate	26.0	4.0	0.95	ug/l	mn	25.0		104	85-115			
Matrix Spike Analyzed: 10/07/2011 (11J0762-MS1)						**Source: IUJ0724-02**						
Perchlorate	30.1	4.0	0.95	ug/l	mn	25.0	5.58	98	80-120			
Matrix Spike Dup Analyzed: 10/07/2011 (11J0762-MSD1)						**Source: IUJ0724-02**						
Perchlorate	30.4	4.0	0.95	ug/l	mn	25.0	5.58	99	80-120	1	20	
Batch: 11J1120 Extracted: 10/10/11												
Blank Analyzed: 10/10/2011 (11J1120-BLK1)												
Total Suspended Solids	ND	10	1.0	mg/l	DK1							
LCS Analyzed: 10/10/2011 (11J1120-BS1)												
Total Suspended Solids	1000	10	1.0	mg/l	DK1	1000		100	85-115			
Duplicate Analyzed: 10/10/2011 (11J1120-DUP1)						**Source: IUJ0626-01**						
Total Suspended Solids	13.0	10	1.0	mg/l	DK1		13.0			0	10	
Batch: 11J1361 Extracted: 10/12/11												
Blank Analyzed: 10/12/2011 (11J1361-BLK1)												
Total Dissolved Solids	ND	10	1.0	mg/l	MC							
LCS Analyzed: 10/12/2011 (11J1361-BS1)												
Total Dissolved Solids	992	10	1.0	mg/l	MC	1000		99	90-110			

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INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11J1361 Extracted: 10/12/11												
Duplicate Analyzed: 10/12/2011 (11J1361-DUP1)							**Source: IUJ1148-06**					
Total Dissolved Solids	722	10	1.0	mg/l	MC		722			0	10	
Batch: 11J2262 Extracted: 10/18/11												
Blank Analyzed: 10/19/2011 (11J2262-BLK1)												
Total Cyanide	ND	5.0	2.2	ug/l	SLA							
LCS Analyzed: 10/19/2011 (11J2262-BS1)												
Total Cyanide	104	5.0	2.2	ug/l	SLA	100		104	90-110			
Matrix Spike Analyzed: 10/19/2011 (11J2262-MS1)							**Source: IUJ0496-02**					
Total Cyanide	109	5.0	2.2	ug/l	SLA	100	ND	109	70-115			
Matrix Spike Dup Analyzed: 10/19/2011 (11J2262-MSD1)							**Source: IUJ0496-02**					
Total Cyanide	118	5.0	2.2	ug/l	SLA	100	ND	118	70-115	8	15	*M1*

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METHOD BLANK/QC DATA

8691

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8691 Extracted: 10/12/11												
LCS Analyzed: 10/12/2011 (S110040-03)						**Source:**						
Uranium, Total	60.8	1	0.217	pCi/L	LS	62		98	80-120			
Blank Analyzed: 10/12/2011 (S110040-04)						**Source:**						
Uranium, Total	ND	1	0.022	pCi/L	LS				-			*U*
Duplicate Analyzed: 10/12/2011 (S110040-05)						**Source: IUJ0496-02**						
Uranium, Total	0.081	1	0.022	pCi/L	LS		0.07		-	15		*Jb*

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METHOD BLANK/QC DATA

900

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8691 Extracted: 10/14/11												
LCS Analyzed: 10/14/2011 (S110040-03)						**Source:**						
Gross Alpha	38.9	3	0.579	pCi/L	DVP	33.7		115	70-130			
Gross Beta	29.1	4	0.862	pCi/L	DVP	28.7		101	70-130			
Blank Analyzed: 10/14/2011 (S110040-04)						**Source:**						
Gross Alpha	0.164	3	0.553	pCi/L	DVP				-			*U*
Gross Beta	-0.111	4	0.838	pCi/L	DVP				-			*U*
Duplicate Analyzed: 10/14/2011 (S110040-05)						**Source: IUJ0496-02**						
Gross Alpha	1.44	3	0.356	pCi/L	DVP		1.49		-	3		*Jb*
Gross Beta	3.65	4	0.827	pCi/L	DVP		2.95		-	21		*Jb*

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METHOD BLANK/QC DATA

901.1

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8691 Extracted: 10/11/11												
LCS Analyzed: 10/14/2011 (S110040-03)						**Source:**						
Cobalt-60	110	10	2.62	pCi/L	LS	116		95	80-120			
Cesium-137	122	20	3.31	pCi/L	LS	124		98	80-120			
Blank Analyzed: 10/14/2011 (S110040-04)						**Source:**						
Cesium-137	ND	20	1.82	pCi/L	LS				-			*U*
Potassium-40	ND	25	25.5	pCi/L	LS				-			*U*
Duplicate Analyzed: 10/15/2011 (S110040-05)						**Source: IUJ0496-02**						
Cesium-137	ND	20	5.66	pCi/L	LS		0		-	0		*U*
Potassium-40	ND	25	85.2	pCi/L	LS		0		-	0		*U*

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METHOD BLANK/QC DATA

903.1

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8691 Extracted: 10/19/11												
LCS Analyzed: 10/19/2011 (S110040-03)						**Source:**						
Radium-226	45.8	1	0.531	pCi/L	TM	50.1		91	80-120			
Blank Analyzed: 10/19/2011 (S110040-04)						**Source:**						
Radium-226	0.032	1	0.592	pCi/L	TM				-			*U*
Duplicate Analyzed: 10/19/2011 (S110040-05)						**Source: IUJ0496-02**						
Radium-226	0.137	1	0.776	pCi/L	TM		0.219		-	0		*U*

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METHOD BLANK/QC DATA

904

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8691 Extracted: 10/25/11												
LCS Analyzed: 10/25/2011 (S110040-03)						**Source:**						
Radium-228	4.07	1	0.398	pCi/L	ASM	4.69		87	60-140			
Blank Analyzed: 10/25/2011 (S110040-04)						**Source:**						
Radium-228	-0.12	1	0.373	pCi/L	ASM				-			*U*
Duplicate Analyzed: 10/25/2011 (S110040-05)						**Source: IUJ0496-02**						
Radium-228	0.032	1	0.375	pCi/L	ASM		0.062		-	0		*U*

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METHOD BLANK/QC DATA

905

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8691 Extracted: 10/14/11												
LCS Analyzed: 10/14/2011 (S110040-03)						**Source:**						
Strontium-90	21.8	2	0.628	pCi/L	WL	18.9		115	80-120			
Blank Analyzed: 10/14/2011 (S110040-04)						**Source:**						
Strontium-90	-0.246	2	1.05	pCi/L	WL				-			*U*
Duplicate Analyzed: 10/14/2011 (S110040-05)						**Source: IUJ0496-02**						
Strontium-90	-0.003	2	0.684	pCi/L	WL		-0.047		-	0		*U*

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METHOD BLANK/QC DATA

906

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8691 Extracted: 10/13/11												
LCS Analyzed: 10/13/2011 (S110040-03)						**Source:**						
Tritium	216	500	20.4	pCi/L	WL	228		95	80-120			*Jb*
Blank Analyzed: 10/13/2011 (S110040-04)						**Source:**						
Tritium	-9.95	500	20.1	pCi/L	WL				-			*U*
Duplicate Analyzed: 10/13/2011 (S110040-05)						**Source: IUJ0496-02**						
Tritium	-99.6	500	204	pCi/L	WL		-66.2		-	0		*U*

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1292103 Extracted: 10/19/11												
Blank Analyzed: 10/20/2011 (G1J190000103B)						**Source:**						
1,2,3,4,6,7,8-HpCDD	ND	0.00005	.000005	ug/L	GV				-			
1,2,3,4,6,7,8-HpCDF	ND	0.00005	.000004	ug/L	GV				-			
1,2,3,4,7,8,9-HpCDF	ND	0.00005	.000003	ug/L	GV				-			
1,2,3,4,7,8-HxCDD	ND	0.00005	.000004	ug/L	GV				-			
1,2,3,4,7,8-HxCDF	4.2e-006	0.00005	.000002	ug/L	GV				-			*J, Q*
1,2,3,6,7,8-HxCDD	ND	0.00005	.000003	ug/L	GV				-			
1,2,3,6,7,8-HxCDF	1.8e-006	0.00005	.000002	ug/L	GV				-			*J, Q*
1,2,3,7,8,9-HxCDD	ND	0.00005	.000003	ug/L	GV				-			
1,2,3,7,8,9-HxCDF	ND	0.00005	.000003	ug/L	GV				-			
1,2,3,7,8-PeCDD	ND	0.00005	0.000007	ug/L	GV				-			
1,2,3,7,8-PeCDF	ND	0.00005	.000006	ug/L	GV				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	.000002	ug/L	GV				-			
2,3,4,7,8-PeCDF	ND	0.00005	.000006	ug/L	GV				-			
2,3,7,8-TCDD	ND	0.00001	.000005	ug/L	GV				-			
2,3,7,8-TCDF	ND	0.00001	.000005	ug/L	GV				-			
OCDD	2.4e-005	0.0001	0.000007	ug/L	GV				-			*J, Q*
OCDF	ND	0.0001	0.000012	ug/L	GV				-			
Total HpCDD	ND	0.00005	.000005	ug/L	GV				-			
Total HpCDF	ND	0.00005	.000003	ug/L	GV				-			
Total HxCDD	ND	0.00005	.000003	ug/L	GV				-			
Total HxCDF	6.1e-006	0.00005	.000002	ug/L	GV				-			*J, Q*
Total PeCDD	ND	0.00005	0.000007	ug/L	GV				-			
Total PeCDF	ND	0.00005	.000006	ug/L	GV				-			
Total TCDD	ND	0.00001	.000005	ug/L	GV				-			
Total TCDF	ND	0.00001	.000005	ug/L	GV				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	*0.00049*			*ug/L*	GV	*0.002*		*24*	*23-140*			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	*0.00053*			*ug/L*	GV	*0.002*		*27*	*28-143*			*
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	*0.0005*			*ug/L*	GV	*0.002*		*25*	*26-138*			*
Surrogate: 13C-1,2,3,4,7,8-HxCDD	*0.00059*			*ug/L*	GV	*0.002*		*30*	*32-141*			*
Surrogate: 13C-1,2,3,4,7,8-HxCDF	*0.00057*			*ug/L*	GV	*0.002*		*29*	*26-152*			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	*0.00066*			*ug/L*	GV	*0.002*		*33*	*28-130*			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	*0.00066*			*ug/L*	GV	*0.002*		*33*	*26-123*			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	*0.0006*			*ug/L*	GV	*0.002*		*30*	*29-147*			
Surrogate: 13C-1,2,3,7,8-PeCDD	*0.00057*			*ug/L*	GV	*0.002*		*29*	*25-181*			
Surrogate: 13C-1,2,3,7,8-PeCDF	*0.00057*			*ug/L*	GV	*0.002*		*29*	*24-185*			

TestAmerica Irvine

Debby Wilson
Project Manager

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THE LEADER IN ENVIRONMENTAL TESTING

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

Project ID: Semi-Annual Outfall 009

Report Number: IUJ0496

Sampled: 10/05/11-10/07/11
Received: 10/05/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1292103 Extracted: 10/19/11												
Blank Analyzed: 10/20/2011 (G1J190000103B)						**Source:**						
Surrogate: 13C-2,3,4,6,7,8-HxCDF	*0.00068*			*ug/L*	GV	*0.002*		*34*	*28-136*			
Surrogate: 13C-2,3,4,7,8-PeCDF	*0.00068*			*ug/L*	GV	*0.002*		*34*	*21-178*			
Surrogate: 13C-2,3,7,8-TCDD	*0.00067*			*ug/L*	GV	*0.002*		*34*	*25-164*			
Surrogate: 13C-2,3,7,8-TCDF	*0.00068*			*ug/L*	GV	*0.002*		*34*	*24-169*			
Surrogate: 13C-OCDD	*0.00081*			*ug/L*	GV	*0.00399*		*20*	*17-157*			
Surrogate: 37Cl4-2,3,7,8-TCDD	*0.00062*			*ug/L*	GV	*0.0008*		*77*	*35-197*			
LCS Analyzed: 10/20/2011 (G1J190000103C)						**Source:**						
1,2,3,4,6,7,8-HpCDD	0.00111	0.00005	0.000007	ug/L	GV	0.001		111	70-140			
1,2,3,4,6,7,8-HpCDF	0.00113	0.00005	0.000006	ug/L	GV	0.001		113	82-122			
1,2,3,4,7,8,9-HpCDF	0.00113	0.00005	0.000009	ug/L	GV	0.001		113	78-138			
1,2,3,4,7,8-HxCDD	0.00114	0.00005	0.000002	ug/L	GV	0.001		114	70-164			
1,2,3,4,7,8-HxCDF	0.00113	0.00005	0.000008	ug/L	GV	0.001		113	72-134			*B*
1,2,3,6,7,8-HxCDD	0.000994	0.00005	0.000002	ug/L	GV	0.001		99	76-134			
1,2,3,6,7,8-HxCDF	0.00113	0.00005	0.000007	ug/L	GV	0.001		113	84-130			*B*
1,2,3,7,8,9-HxCDD	0.00113	0.00005	0.000002	ug/L	GV	0.001		113	64-162			
1,2,3,7,8,9-HxCDF	0.00114	0.00005	0.000008	ug/L	GV	0.001		114	78-130			
1,2,3,7,8-PeCDD	0.0011	0.00005	0.000007	ug/L	GV	0.001		110	70-142			
1,2,3,7,8-PeCDF	0.00111	0.00005	0.000009	ug/L	GV	0.001		111	80-134			
2,3,4,6,7,8-HxCDF	0.00114	0.00005	0.000006	ug/L	GV	0.001		114	70-156			
2,3,4,7,8-PeCDF	0.00106	0.00005	0.000009	ug/L	GV	0.001		106	68-160			
2,3,7,8-TCDD	0.000205	0.00001	0.000005	ug/L	GV	0.0002		102	67-158			
2,3,7,8-TCDF	0.00024	0.00001	0.000007	ug/L	GV	0.0002		120	75-158			
OCDD	0.00241	0.0001	0.000014	ug/L	GV	0.002		121	78-144			*B*
OCDF	0.00269	0.0001	0.000019	ug/L	GV	0.002		134	63-170			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	*0.000608*			*ug/L*	GV	*0.002*		*30*	*26-166*			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	*0.00067*			*ug/L*	GV	*0.002*		*34*	*21-158*			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	*0.000634*			*ug/L*	GV	*0.002*		*32*	*20-186*			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	*0.000662*			*ug/L*	GV	*0.002*		*33*	*21-193*			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	*0.000595*			*ug/L*	GV	*0.002*		*30*	*19-202*			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	*0.000762*			*ug/L*	GV	*0.002*		*38*	*25-163*			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	*0.000718*			*ug/L*	GV	*0.002*		*36*	*21-159*			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	*0.000711*			*ug/L*	GV	*0.002*		*36*	*17-205*			
Surrogate: 13C-1,2,3,7,8-PeCDD	*0.000577*			*ug/L*	GV	*0.002*		*29*	*21-227*			
Surrogate: 13C-1,2,3,7,8-PeCDF	*0.000523*			*ug/L*	GV	*0.002*		*26*	*21-192*			

TestAmerica Irvine

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

Project ID: Semi-Annual Outfall 009
Report Number: IUJ0496

Sampled: 10/05/11-10/07/11
Received: 10/05/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1292103 Extracted: 10/19/11												
LCS Analyzed: 10/20/2011 (G1J190000103C)						**Source:**						
Surrogate: 13C-2,3,4,6,7,8-HxCDF	*0.000738*			*ug/L*	GV	*0.002*		*37*	*22-176*			
Surrogate: 13C-2,3,4,7,8-PeCDF	*0.000641*			*ug/L*	GV	*0.002*		*32*	*13-328*			
Surrogate: 13C-2,3,7,8-TCDD	*0.000545*			*ug/L*	GV	*0.002*		*27*	*20-175*			
Surrogate: 13C-2,3,7,8-TCDF	*0.000549*			*ug/L*	GV	*0.002*		*28*	*22-152*			
Surrogate: 13C-OCDD	*0.00106*			*ug/L*	GV	*0.00401*		*26*	*13-199*			
Surrogate: 37Cl4-2,3,7,8-TCDD	*0.000612*			*ug/L*	GV	*0.0008*		*77*	*31-191*			

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Received: 10/05/11

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
IUJ0496-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0.19	4.8	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
IUJ0496-02	Antimony-200.8	Antimony	ug/l	0.57	2.0	6
IUJ0496-02	Cadmium-200.8	Cadmium	ug/l	0.068	1.0	4
IUJ0496-02	Chloride - 300.0	Chloride	mg/l	2.56	0.50	150
IUJ0496-02	Copper-200.8	Copper	ug/l	6.48	2.0	14
IUJ0496-02	Cyanide, Total-4500CN-E (5ppb)	Total Cyanide	ug/l	-2	5.0	9.5
IUJ0496-02	Lead-200.8	Lead	ug/l	2.71	1.0	5.2
IUJ0496-02	Mercury - 245.1	Mercury	ug/l	0.012	0.20	0.13
IUJ0496-02	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.70	0.26	10
IUJ0496-02	Perchlorate 314.0 - Default	Perchlorate	ug/l	0	4.0	6
IUJ0496-02	Sulfate-300.0	Sulfate	mg/l	6.51	0.50	250
IUJ0496-02	TDS - SM2540C	Total Dissolved Solids	mg/l	55	10	850
IUJ0496-02	Thallium-200.8	Thallium	ug/l	0.032	1.0	2
IUJ0496-02	TSS - SM2540D	Total Suspended Solids	mg/l	6.00	10	45

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

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Report Number: IUJ0496

Sampled: 10/05/11-10/07/11
Received: 10/05/11

DATA QUALIFIERS AND DEFINITIONS

*****	Surrogate recovery is outside stated control limits.
B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J	Estimated result. Result is less than the reporting limit.
Ja	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Jb	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
M1	The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
MNR1	There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
P	The sample, as received, was not preserved in accordance to the referenced analytical method.
pH	pH = 7.0
Q	Estimated maximum possible concentration (EMPC).
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

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Attention: Bronwyn Kelly

Project ID: Semi-Annual Outfall 009

Report Number: IUJ0496

Sampled: 10/05/11-10/07/11
Received: 10/05/11

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	N/A
EPA 200.8	Water	X	N/A
EPA 245.1-Diss	Water	X	N/A
EPA 245.1	Water	X	N/A
EPA 300.0	Water	X	N/A
EPA 314.0	Water	X	N/A
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2540C	Water	X	N/A
SM4500CN-E	Water	X	N/A

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

Subcontracted Laboratories

Aquatic Testing Laboratories-SUB *California Cert #1775*
4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: Bioassay-7 dy Chrnic
Samples: IUJ0496-02

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

Project ID: Semi-Annual Outfall 009
Report Number: IUJ0496

Sampled: 10/05/11-10/07/11
Received: 10/05/11

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec
Samples: IUJ0496-02, IUJ0496-03

Analysis Performed: Gross Alpha
Samples: IUJ0496-02, IUJ0496-03

Analysis Performed: Gross Beta
Samples: IUJ0496-02, IUJ0496-03

Analysis Performed: Radium 226/228 Combined (AZ-MAP)
Samples: IUJ0496-02, IUJ0496-03

Analysis Performed: Strontium 90
Samples: IUJ0496-02, IUJ0496-03

Analysis Performed: Tritium
Samples: IUJ0496-02

Analysis Performed: Uranium, Combined
Samples: IUJ0496-02, IUJ0496-03

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8691
Samples: IUJ0496-02, IUJ0496-03

Method Performed: 900
Samples: IUJ0496-02, IUJ0496-03

Method Performed: 901.1
Samples: IUJ0496-02, IUJ0496-03

Method Performed: 903.1
Samples: IUJ0496-02, IUJ0496-03

Method Performed: 904
Samples: IUJ0496-02, IUJ0496-03

Method Performed: 905
Samples: IUJ0496-02, IUJ0496-03

Method Performed: 906
Samples: IUJ0496-02

TestAmerica Irvine

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

Project ID: Semi-Annual Outfall 009
Report Number: IUJ0496

Sampled: 10/05/11-10/07/11
Received: 10/05/11

TestAmerica West Sacramento *NELAC Cert #1119CA, Nevada Cert #CA44*
880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B
Samples: IUJ0496-02

TestAmerica Irvine

Debby Wilson
Project Manager

CHAIN OF CUSTODY FORM

IOJ0496

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Semi-Annual Outfall 009** **GRAB** Stormwater at SW-13
Project Manager: Bronwyn Kelly Sampler: Rick Barraza	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED: Oil & Grease (1664-HEM)													
Outfall 009	W	1L Amber	2	10-5-2011 16:50	HCl	1A, 1B	X													

Field readings:
(Log in and include in report Temp and pH)

Temp °F = 60

pH = 7.1

Time of readings = 11:50

Comments

10/5 21:30

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	Date/Time:	Received By	Date/Time:
	10-5-2011 15:30		10-5-11 15:30
Relinquished By	Date/Time:	Received By	Date/Time:
	10-5-11 18:45		
Relinquished By	Date/Time:	Received By	Date/Time:
			10/5/11 1845

Turn-around time: (Check)

24 Hour: _____ 72 Hour: _____ 10 Day: _____

48 Hour: _____ 5 Day: _____ Normal: X

Sample Integrity: (Check)

Intact: X On Ice: X 7.2°C

Data Requirements: (Check)

No Level IV: _____ All Level IV: _____ NPDES Level IV: X

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Semi-Annual Outfall 009** **COMPOSITE - LOW** Stormwater at SW-13
Project Manager: Bronwyn Kelly Sampler: RickBANAGA	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Cl, SO_4, NO_3+NO_2-N, Perchlorate	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Cyanide	Chronic Toxicity							Comments
Outfall 009	W	1L Poly	1	10-5-2011 17:54	HNO_3	2A	X														
Outfall 009 Dup	W	1L Poly	1		HNO_3	2B	X														
Outfall 009	W	1L Amber	2		None	3A, 3B		X													
Outfall 009	W	500 mL Poly	2		None	4A, 4B			X												
Outfall 009	W	500 mL Poly	1		None	5				X											
Outfall 009	W	1L Poly	1		None	6					X										Filter w/in 24hrs of receipt at lab
Outfall 009	W	2.5 Gal Cube	1		None	7A						X									Unfiltered and unpreserved analysis
		500 mL Amber	1		None	7B															
Outfall 009	W	500 mL Poly	1		NaOH	8							X								
Outfall 009	W	1 Gal Poly	1	10-5-2011 17:54	None	9								X							**Only test if first or second rain events of the year**

COC Page 2 of 2 list the Composite Samples for Outfall 009 for this storm event.

These must be added to the same work order for COC Page 1 of 2 for Outfall 009 for the same event.

Relinquished By	Date/Time:	Received By	Date/Time:
	10-6-2011 12:00		10-6-11 12:00
Relinquished By	Date/Time:	Received By	Date/Time:
	10-6-11 16:55		
Relinquished By	Date/Time:	Received By	Date/Time:
		JvBank	10/6/11 16:55

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: _____
48 Hour: _____ 5 Day: _____ Normal: X

Sample Integrity: (Check)
Intact: ✓ On Ice: ✓ 4.8°C

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

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

October 27, 2011

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

Reference: **Test America-Irvine IUJ0496**
Eberline Analytical Report S110040-8691
Sample Delivery Group 8691

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for two water samples received under Test America Job No. IUJ0496. The samples were received on October 8, 2011.

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

Sincerely,

Joseph Verville
Client Services Manager

NJV/mw

Enclosure: Level IV CLP-like Data Package CD

1.0 General Comments

Sample delivery group 8691 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 samples were 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 samples as received i.e. the samples were 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 volumes.

2.0 Quality Control

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, and duplicate analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

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

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

4.0 Analysis Notes

4.1 Gross Alpha/Gross Beta Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.2 Tritium Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.3 Strontium-90 Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.4 Radium-226 Analysis –No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.5 Radium-228 Analysis - No problems were encountered during the processing of the samples. The MDA for the QC 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. The gamma spectroscopy planchets were counted for sufficient time to meet the required Cs-137 detection limit of 20 pCi/L. As a consequence of keying to the Cs-137 RDL, the detection limit for K-40 was not achieved for the QC blank or duplicate analysis.

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."

10/27/11

Joseph Verville
Client Services Manager

Date

EBERLINE ANALYTICAL
SDG 8691

SDG 8691	Client Test America, Inc.
Contact Joseph Verville	Contract IUJ0496

SUMMARY DATA SECTION

TABLE OF CONTENTS

Prepared by

Reviewed by

Lab id	EAS
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EBERLINE ANALYTICAL

SDG 8691

SDG 8691 Contact Joseph Verville	**REPORT GUIDE**	Client Test America, Inc. Contract IUJ0496

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

Lab id	EAS
Protocol	TA
Version	Ver 1.0
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SDG 8691
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUJ0496

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.

Lab id EAS
Protocol TA
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EBERLINE ANALYTICAL

SDG 8691

LAB SAMPLE SUMMARY

SDG 8691
Contact Joseph Verville

Client Test America, Inc.
Contract IUJ0496

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S110040-01	IUJ0496-02	Boeing SSFL	WATER			IUJ0496	10/05/11 17:54
S110040-02	IUJ0496-03 (TRIP-BLANK)	Boeing SSFL	WATER			IUJ0496	10/07/11 15:00
S110040-03	Lab Control Sample		WATER				
S110040-04	Method Blank		WATER				
S110040-05	Duplicate (S110040-01)	Boeing SSFL	WATER				10/05/11 17:54

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

QC SUMMARY

SDG 8691
Contact Joseph Verville

Client Test America, Inc.
Contract IUJ0496

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8691	IUJ0496	IUJ0496-02	WATER		10 L		10/08/11	3	S110040-01	8691-001
		IUJ0496-03 (TRIP-BLANK)	WATER		10 L		10/08/11	1	S110040-02	8691-002
		Method Blank	WATER						S110040-04	8691-004
		Lab Control Sample	WATER						S110040-03	8691-003
		Duplicate (S110040-01)	WATER		10 L		10/08/11	3	S110040-05	8691-005

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

PREP BATCH SUMMARY

SDG 8691
Contact Joseph Verville

Client Test America, Inc.
Contract IUJ0496

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Beta Counting												
AC	WATER	Radium-228 in Water	7195-057	10.4	2			1	1	1/1		
SR	WATER	Strontium-90 in Water	7195-057	10.4	2			1	1	1/1		
Gas Proportional Counting												
80A	WATER	Gross Alpha in Water	7195-057	20.6	2			1	1	1/1		
80B	WATER	Gross Beta in Water	7195-057	11.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	WATER	Gamma Emitters in Water	7195-057	7.0	2			1	1	1/1		
Kinetic Phosphorimetry, ug												
U_T	WATER	Uranium, Total	7195-057		2			1	1	1/1		
Liquid Scintillation Counting												
H	WATER	Tritium in Water	7195-057	10.0	1			1	1	1/1		
Radon Counting												
RA	WATER	Radium-226 in Water	7195-057	16.4	2			1	1	1/1		

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-PBS
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Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

LAB WORK SUMMARY

SDG 8691
Contact Joseph Verville

Client Test America, Inc.
Contract IUJ0496

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S110040-01	IUJ0496-02			8691-001	80A/80		10/14/11	10/17/11	BW	Gross Alpha in Water
10/05/11	Boeing SSFL		WATER	8691-001	80B/80		10/14/11	10/17/11	BW	Gross Beta in Water
10/08/11	IUJ0496			8691-001	AC		10/25/11	10/26/11	BW	Radium-228 in Water
				8691-001	GAM		10/14/11	10/17/11	CSS	Gamma Emitters in Water
				8691-001	H		10/13/11	10/26/11	BW	Tritium in Water
				8691-001	RA		10/19/11	10/19/11	BW	Radium-226 in Water
				8691-001	SR		10/14/11	10/19/11	BW	Strontium-90 in Water
				8691-001	U_T		10/12/11	10/12/11	MWT	Uranium, Total
S110040-02	IUJ0496-03 (TRIP-BLANK)			8691-002	80A/80		10/14/11	10/17/11	BW	Gross Alpha in Water
10/07/11	Boeing SSFL		WATER	8691-002	80B/80		10/14/11	10/17/11	BW	Gross Beta in Water
10/08/11	IUJ0496			8691-002	AC		10/25/11	10/26/11	BW	Radium-228 in Water
				8691-002	GAM		10/14/11	10/17/11	CSS	Gamma Emitters in Water
				8691-002	RA		10/19/11	10/19/11	BW	Radium-226 in Water
				8691-002	SR		10/14/11	10/19/11	BW	Strontium-90 in Water
				8691-002	U_T		10/12/11	10/12/11	MWT	Uranium, Total
S110040-03	Lab Control Sample			8691-003	80A/80		10/14/11	10/17/11	BW	Gross Alpha in Water
			WATER	8691-003	80B/80		10/14/11	10/17/11	BW	Gross Beta in Water
				8691-003	AC		10/25/11	10/26/11	BW	Radium-228 in Water
				8691-003	GAM		10/14/11	10/17/11	CSS	Gamma Emitters in Water
				8691-003	H		10/13/11	10/26/11	BW	Tritium in Water
				8691-003	RA		10/19/11	10/19/11	BW	Radium-226 in Water
				8691-003	SR		10/14/11	10/19/11	BW	Strontium-90 in Water
				8691-003	U_T		10/12/11	10/12/11	MWT	Uranium, Total
S110040-04	Method Blank			8691-004	80A/80		10/14/11	10/17/11	BW	Gross Alpha in Water
			WATER	8691-004	80B/80		10/14/11	10/17/11	BW	Gross Beta in Water
				8691-004	AC		10/25/11	10/26/11	BW	Radium-228 in Water
				8691-004	GAM		10/14/11	10/17/11	CSS	Gamma Emitters in Water
				8691-004	H		10/13/11	10/26/11	BW	Tritium in Water
				8691-004	RA		10/19/11	10/19/11	BW	Radium-226 in Water
				8691-004	SR		10/14/11	10/19/11	BW	Strontium-90 in Water
				8691-004	U_T		10/12/11	10/12/11	MWT	Uranium, Total

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

WORK SUMMARY, cont.

SDG 8691
Contact Joseph Verville

Client Test America, Inc.
Contract IUJ0496

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S110040-05	Duplicate (S110040-01)			8691-005	80A/80		10/14/11	10/17/11	BW	Gross Alpha in Water
10/05/11	Boeing SSFL		WATER	8691-005	80B/80		10/14/11	10/17/11	BW	Gross Beta in Water
10/08/11				8691-005	AC		10/25/11	10/26/11	BW	Radium-228 in Water
				8691-005	GAM		10/15/11	10/17/11	CSS	Gamma Emitters in Water
				8691-005	H		10/13/11	10/26/11	BW	Tritium in Water
				8691-005	RA		10/19/11	10/19/11	BW	Radium-226 in Water
				8691-005	SR		10/14/11	10/19/11	BW	Strontium-90 in Water
				8691-005	U_T		10/12/11	10/12/11	MWT	Uranium, Total

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			1	1	1	5
80B/80		Gross Beta in Water	900.0	2			1	1	1	5
AC		Radium-228 in Water	904.0	2			1	1	1	5
GAM		Gamma Emitters in Water	901.1	2			1	1	1	5
H		Tritium in Water	906.0	1			1	1	1	4
RA		Radium-226 in Water	903.1	2			1	1	1	5
SR		Strontium-90 in Water	905.0	2			1	1	1	5
U_T		Uranium, Total	D5174	2			1	1	1	5
TOTALS				15			8	8	8	39

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

8691-004 Method Blank

METHOD BLANK

SDG 8691 Client Test America, Inc.
Contact Joseph Verville Contract IUJ0496

Lab sample id S110040-04 Client sample id Method Blank
Dept sample id 8691-004 Material/Matrix WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	0.164	0.32	0.553	3.00	U	80A
Gross Beta	12587472	-0.111	0.49	0.838	4.00	U	80B
Tritium	10028178	-9.95	12	20.1	500	U	H
Radium-226	13982633	0.032	0.33	0.592	1.00	U	RA
Radium-228	15262201	-0.120	0.13	0.373	1.00	U	AC
Strontium-90	10098972	-0.246	0.41	1.05	2.00	U	SR
Uranium, Total		0	0.009	0.022	1.00	U	U_T
Potassium-40	13966002	U		25.5	25.0	U	GAM
Cesium-137	10045973	U		1.82	20.0	U	GAM

QC-BLANK #80241

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

8691-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 8691 | Client Test America, Inc.
Contact Joseph Verville | Contract IUJ0496

Lab sample id S110040-03 | Client sample id Lab Control Sample
Dept sample id 8691-003 | Material/Matrix WATER

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	38.9	2.2	0.579	3.00		80A	33.7	1.3	115	75-125	70-130
Gross Beta	29.1	1.2	0.862	4.00		80B	28.7	1.1	101	87-113	70-130
Tritium	216	17	20.4	500	J	H	228	9.1	95	87-113	80-120
Radium-226	45.8	1.8	0.531	1.00		RA	50.1	2.0	91	84-116	80-120
Radium-228	4.07	0.28	0.398	1.00		AC	4.69	0.19	87	88-112	60-140
Strontium-90	21.8	1.5	0.628	2.00		SR	18.9	0.76	115	85-115	80-120
Uranium, Total	60.8	7.5	0.217	1.00		U_T	62.0	2.5	98	87-113	80-120
Cobalt-60	110	5.4	2.62	10.0		GAM	116	4.6	95	91-109	80-120
Cesium-137	122	5.0	3.31	20.0		GAM	124	5.0	98	91-109	80-120

QC-LCS #80240

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

8691-005

IUJ0496-02

DUPLICATE

SDG 8691
Contact Joseph Verville
Client Test America, Inc.
Contract IUJ0496

DUPLICATE	ORIGINAL	
Lab sample id S110040-05	Lab sample id S110040-01	Client sample id IUJ0496-02
Dept sample id 8691-005	Dept sample id 8691-001	Location/Matrix Boeing SSFL WATER
	Received 10/08/11	Collected/Volume 10/05/11 17:54 10 L
		Chain of custody id IUJ0496

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	1.44	0.39	0.356	3.00	J	80A	1.49	0.39	0.327	J	3	71	0.1
Gross Beta	3.65	0.61	0.827	4.00	J	80B	2.95	0.58	0.798	J	21	45	1.4
Tritium	-99.6	120	204	500	U	H	-66.2	120	206	U	-		0.4
Radium-226	0.137	0.43	0.776	1.00	U	RA	0.219	0.41	0.703	U	-		0.3
Radium-228	0.032	0.14	0.375	1.00	U	AC	0.062	0.15	0.382	U	-		0.3
Strontium-90	-0.003	0.29	0.684	2.00	U	SR	-0.047	0.35	0.824	U	-		0.2
Uranium, Total	0.081	0.013	0.022	1.00	J	U_T	0.070	0.013	0.022	J	15	37	1.2
Potassium-40	U		85.2	25.0	U	GAM	U		13.0	U	-		1.7
Cesium-137	U		5.66	20.0	U	GAM	U		1.06	U	-		1.6

QC-DUP#1 80242

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

8691-001 IUJ0496-02

DATA SHEET

SDG 8691 Client Test America, Inc.
Contact Joseph Verville Contract IUJ0496

Lab sample id S110040-01 Client sample id IUJ0496-02
Dept sample id 8691-001 Location/Matrix Boeing SSFL WATER
Received 10/08/11 Collected/Volume 10/05/11 17:54 10 L
Chain of custody id IUJ0496

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	1.49	0.39	0.327	3.00	J	80A
Gross Beta	12587472	2.95	0.58	0.798	4.00	J	80B
Tritium	10028178	-66.2	120	206	500	U	H
Radium-226	13982633	0.219	0.41	0.703	1.00	U	RA
Radium-228	15262201	0.062	0.15	0.382	1.00	U	AC
Strontium-90	10098972	-0.047	0.35	0.824	2.00	U	SR
Uranium, Total		0.070	0.013	0.022	1.00	J	U_T
Potassium-40	13966002	U		13.0	25.0	U	GAM
Cesium-137	10045973	U		1.06	20.0	U	GAM

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

8691-002 IUJ0496-03 (TRIP-BLANK)

DATA SHEET

SDG 8691 Client Test America, Inc.
Contact Joseph Verville Contract IUJ0496

Lab sample id S110040-02 Client sample id IUJ0496-03 (TRIP-BLANK)
Dept sample id 8691-002 Location/Matrix Boeing SSFL WATER
Received 10/08/11 Collected/Volume 10/07/11 15:00 10 L
Chain of custody id IUJ0496

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	0.003	0.16	0.297	3.00	U	80A
Gross Beta	12587472	0.008	0.47	0.794	4.00	U	80B
Radium-226	13982633	-0.050	0.39	0.742	1.00	U	RA
Radium-228	15262201	-0.216	0.21	0.407	1.00	U	AC
Strontium-90	10098972	-0.015	0.51	1.14	2.00	U	SR
Uranium, Total		0	0.009	0.022	1.00	U	U_T
Potassium-40	13966002	U		93.3	25.0	U	GAM
Cesium-137	10045973	U		3.06	20.0	U	GAM

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix WATER
SDG 8691
Contact Joseph Verville

Client Test America, Inc.
Contract IUJ0496

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Radium-228	
Preparation batch 7195-057						
S110040-01			8691-001	IUJ0496-02	U	
S110040-02			8691-002	IUJ0496-03 (TRIP-BLANK)	U	
S110040-03			8691-003	Lab Control Sample	ok	
S110040-04			8691-004	Method Blank	U	
S110040-05			8691-005	Duplicate (S110040-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7195-057			2σ prep error 10.4 %	Reference Lab Notebook No. 7195 pg.32												
S110040-01			IUJ0496-02	0.382	1.80			83		150			20	10/25/11	10/25	GRB-217
S110040-02			IUJ0496-03 (TRIP-BLANK)	0.407	1.80			76		150			18	10/25/11	10/25	GRB-220
S110040-03			Lab Control Sample	0.398	1.80			77		150				10/25/11	10/25	GRB-221
S110040-04			Method Blank	0.373	1.80			78		150				10/25/11	10/25	GRB-222
S110040-05			Duplicate (S110040-01)	0.375	1.80			82		150			20	10/25/11	10/25	GRB-223
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 FOR 5 SAMPLES
MDA 0.387 ± 0.030
YIELD 79 ± 6

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR Matrix WATER
SDG 8691
Contact Joseph Verville

Client Test America, Inc.
Contract IUJ0496

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Strontium-90	
Preparation batch 7195-057						
S110040-01			8691-001	IUJ0496-02	U	
S110040-02			8691-002	IUJ0496-03 (TRIP-BLANK)	U	
S110040-03			8691-003	Lab Control Sample	ok	
S110040-04			8691-004	Method Blank	U	
S110040-05			8691-005	Duplicate (S110040-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	2.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7195-057			2σ prep error 10.4 %	Reference Lab Notebook No. 7195 pg.32												
S110040-01			IUJ0496-02	0.824	0.500			83		50			9	10/14/11	10/14	GRB-225
S110040-02			IUJ0496-03 (TRIP-BLANK)	1.14	0.500			84		50			7	10/14/11	10/14	GRB-207
S110040-03			Lab Control Sample	0.628	0.500			84		56				10/14/11	10/14	GRB-217
S110040-04			Method Blank	1.05	0.500			81		50				10/14/11	10/14	GRB-227
S110040-05			Duplicate (S110040-01)	0.684	0.500			88		50			9	10/14/11	10/14	GRB-220
Nominal values and limits from method				2.00	0.500			30-105		50			180			

PROCEDURES REFERENCE 905.0
CP-380 Strontium in Water Samples, rev 5

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.865 ± 0.448
YIELD 84 ± 5

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

LAB METHOD SUMMARY

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Test 80A Matrix WATER
SDG 8691
Contact Joseph Verville

Client Test America, Inc.
Contract IUJ0496

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
Preparation batch 7195-057						
S110040-01	80		8691-001	IUJ0496-02	1.49	J
S110040-02	80		8691-002	IUJ0496-03 (TRIP-BLANK)	U	
S110040-03	80		8691-003	Lab Control Sample	ok	
S110040-04	80		8691-004	Method Blank	U	
S110040-05	80		8691-005	Duplicate (S110040-01)	ok	J
Nominal values and limits from method				RDLs (pCi/L)	3.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7195-057			2σ prep error 20.6 %	Reference Lab Notebook No. 7195 pg.32												
S110040-01	80		IUJ0496-02	0.327	0.300			12		400			9	10/14/11	10/14	GRB-109
S110040-02	80		IUJ0496-03 (TRIP-BLANK)	0.297	0.300			0		400			7	10/14/11	10/14	GRB-111
S110040-03	80		Lab Control Sample	0.579	0.300			62		400				10/14/11	10/14	GRB-112
S110040-04	80		Method Blank	0.553	0.300			65		400				10/14/11	10/14	GRB-111
S110040-05	80		Duplicate (S110040-01)	0.356	0.300			12		400			9	10/14/11	10/14	GRB-112
Nominal values and limits from method				3.00	0.300			0-250		100			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.422 ± 0.266
RESIDUE 30 ± 62

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

Test 80B Matrix WATER
SDG 8691
Contact Joseph Verville

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Client Test America, Inc.
Contract IUJ0496

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
Preparation batch 7195-057						
S110040-01	80		8691-001	IUJ0496-02	2.95	J
S110040-02	80		8691-002	IUJ0496-03 (TRIP-BLANK)	U	
S110040-03	80		8691-003	Lab Control Sample	ok	
S110040-04	80		8691-004	Method Blank	U	
S110040-05	80		8691-005	Duplicate (S110040-01)	ok	J
Nominal values and limits from method				RDLs (pCi/L)	4.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7195-057			2σ prep error 11.0 %	Reference Lab Notebook No. 7195 pg.32												
S110040-01	80		IUJ0496-02	0.798	0.300			12		400			9	10/14/11	10/14	GRB-109
S110040-02	80		IUJ0496-03 (TRIP-BLANK)	0.794	0.300			0		400			7	10/14/11	10/14	GRB-111
S110040-03	80		Lab Control Sample	0.862	0.300			62		400				10/14/11	10/14	GRB-112
S110040-04	80		Method Blank	0.838	0.300			65		400				10/14/11	10/14	GRB-111
S110040-05	80		Duplicate (S110040-01)	0.827	0.300			12		400			9	10/14/11	10/14	GRB-112
Nominal values and limits from method				4.00	0.300			0-250		100			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.824 ± 0.057
RESIDUE 30 ± 62

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Test GAM Matrix WATER
SDG 8691
Contact Joseph Verville

Client Test America, Inc.
Contract IUJ0496

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137	
Preparation batch 7195-057							
S110040-01			8691-001	IUJ0496-02		U	
S110040-02			8691-002	IUJ0496-03 (TRIP-BLANK)		U	
S110040-03			8691-003	Lab Control Sample	ok	ok	
S110040-04			8691-004	Method Blank		U	
S110040-05			8691-005	Duplicate (S110040-01)		-	U
Nominal values and limits from method				RDLs (pCi/L)	10.0	20.0	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7195-057			2σ prep error 7.0 %		Reference Lab Notebook No. 7195 pg.32											
S110040-01			IUJ0496-02		2.00					881			9	10/11/11	10/14	MB,08,00
S110040-02			IUJ0496-03 (TRIP-BLANK)		2.00					404			7	10/11/11	10/14	MB,06,00
S110040-03			Lab Control Sample		2.00					404				10/11/11	10/14	01,03,00
S110040-04			Method Blank		2.00					404				10/11/11	10/14	01,04,00
S110040-05			Duplicate (S110040-01)		2.00					418			10	10/11/11	10/15	MB,06,00
Nominal values and limits from method				6.00	2.00					400			180			

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

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

LAB METHOD SUMMARY

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY, UG

Test U T Matrix WATER
SDG 8691
Contact Joseph Verville

Client Test America, Inc.
Contract IUJ0496

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Uranium, Total
Preparation batch 7195-057					
S110040-01			8691-001	IUJ0496-02	0.070 J
S110040-02			8691-002	IUJ0496-03 (TRIP-BLANK)	U
S110040-03			8691-003	Lab Control Sample	ok
S110040-04			8691-004	Method Blank	U
S110040-05			8691-005	Duplicate (S110040-01)	ok J
Nominal values and limits from method				RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7195-057			2σ prep error	Reference Lab Notebook No. 7195 pg.32												
S110040-01			IUJ0496-02	0.022	0.0200								7	10/12/11	10/12	KPA-001
S110040-02			IUJ0496-03 (TRIP-BLANK)	0.022	0.0200								5	10/12/11	10/12	KPA-001
S110040-03			Lab Control Sample	0.217	0.0200									10/12/11	10/12	KPA-001
S110040-04			Method Blank	0.022	0.0200									10/12/11	10/12	KPA-001
S110040-05			Duplicate (S110040-01)	0.022	0.0200								7	10/12/11	10/12	KPA-001
Nominal values and limits from method				1.00	0.0200								180			

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.061 ± 0.174
YIELD _____ ± _____

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

Test H Matrix WATER
SDG 8691
Contact Joseph Verville

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Client Test America, Inc.
Contract IUJ0496

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7195-057						
S110040-01			8691-001	IUJ0496-02	U	
S110040-03			8691-003	Lab Control Sample	ok	J
S110040-04			8691-004	Method Blank	U	
S110040-05			8691-005	Duplicate (S110040-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	500	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7195-057			2σ prep error 10.0 %	Reference Lab Notebook No. 7195 pg.32												
S110040-01			IUJ0496-02	206	0.0100			100		150			8	10/13/11	10/13	LSC-005
S110040-03			Lab Control Sample	20.4	1.00			10		150				10/13/11	10/13	LSC-005
S110040-04			Method Blank	20.1	1.00			10		150				10/13/11	10/13	LSC-005
S110040-05			Duplicate (S110040-01)	204	0.0100			100		150			8	10/13/11	10/13	LSC-005
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 FOR 4 SAMPLES
MDA 113 ± 213
YIELD 55 ± 104

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

LAB METHOD SUMMARY

RADIUM-226 IN WATER

RADON COUNTING

Test RA Matrix WATER
SDG 8691
Contact Joseph Verville

Client Test America, Inc.
Contract IUJ0496

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Radium-226	
Preparation batch 7195-057						
S110040-01			8691-001	IUJ0496-02	U	
S110040-02			8691-002	IUJ0496-03 (TRIP-BLANK)	U	
S110040-03			8691-003	Lab Control Sample	ok	
S110040-04			8691-004	Method Blank	U	
S110040-05			8691-005	Duplicate (S110040-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7195-057			2σ prep error 16.4 %	Reference Lab Notebook No. 7195 pg.32												
S110040-01			IUJ0496-02	0.703	0.100			100		90			14	10/19/11	10/19	RN-010
S110040-02			IUJ0496-03 (TRIP-BLANK)	0.742	0.100			100		90			12	10/19/11	10/19	RN-012
S110040-03			Lab Control Sample	0.531	0.100			100		160				10/19/11	10/19	RN-016
S110040-04			Method Blank	0.592	0.100			100		137				10/19/11	10/19	RN-014
S110040-05			Duplicate (S110040-01)	0.776	0.100			100		90			14	10/19/11	10/19	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 FOR 5 SAMPLES
MDA 0.669 ± 0.207
YIELD 100 ± 0

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

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Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUJ0496

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.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/27/11

SDG 8691
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUJ0496

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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Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/27/11

EBERLINE ANALYTICAL

SDG 8691

SDG 8691
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUJ0496

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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Contract IUJ0496

DATA SHEET

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

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

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

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

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

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DATA SHEET

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

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

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DATA SHEET

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

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
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REPORT GUIDE

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Contract IUJ0496

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 Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/27/11

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REPORT GUIDE

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Contract IUJ0496

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.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/27/11

SDG 8691
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract IUJ0496

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.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/27/11

SDG 8691
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUJ0496

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.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/27/11

SDG 8691
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REPORT GUIDE

Client Test America, Inc.
Contract IUJ0496

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'

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/27/11

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.

* Prepareation 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

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.

SDG 8691
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract IUJ0496

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.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/27/11

SUBCONTRACT ORDER

TestAmerica Irvine

IUJ0496

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

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: IUJ0496-02	**Water**	**Sampled: 10/05/11 17:54**		
Uranium, Combined-O	10/19/11 12:00	10/04/12 17:54		Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	10/19/11 12:00	10/04/12 17:54		Out Eberline, Boeing permit, DO NOT FILTER!
Strontium 90-O	10/19/11 12:00	10/04/12 17:54		Out Eberline, Boeing permit, DO NOT FILTER!
Radium 226/228 Combined (AZ-M	10/19/11 12:00	10/04/12 17:54		Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	10/19/11 12:00	04/02/12 17:54		Out Eberline, Boeing permit, DO NOT FILTER!
Gross Alpha-O	10/19/11 12:00	04/02/12 17:54		Out Eberline, Boeing permit, DO NOT FILTER!
Gamma Spec-O	10/19/11 12:00	10/04/12 17:54		Out Eberline, K-40 and CS-137 only, DO NOT FILTER
Containers Supplied:				
2.5 gal Poly (J)	500 mL Amber (K)			
Sample ID: IUJ0496-03	**Water**	**Sampled: 10/07/11 15:00**		
Uranium, Combined-O	10/19/11 12:00	10/06/12 15:00		Out Eberline, Boeing permit, DO NOT FILTER!
Strontium 90-O	10/19/11 12:00	10/06/12 15:00		Out Eberline, Boeing permit, DO NOT FILTER!
Radium 226/228 Combined (AZ-M	10/19/11 12:00	10/06/12 15:00		Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	10/19/11 12:00	04/04/12 15:00		Out Eberline, Boeing permit, DO NOT FILTER!
Gross Alpha-O	10/19/11 12:00	04/04/12 15:00		Out Eberline, Boeing permit, DO NOT FILTER!
Gamma Spec-O	10/19/11 12:00	10/06/12 15:00		Out Eberline, K-40 and CS-137 only, DO NOT FILTER
Containers Supplied:				
2.5 gal Poly (A)				

Released By	Date	Received By	Date
Released By	Date	Received By	Date

Subcontract Order - TestAmerica Irvine (IUJ0496)

8691

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)

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

Analysis	Units	Expires	Comments
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water)		Sampled: 10/05/11 17:54	
Gamma Spec-O	mg/kg	10/04/12 17:54	Out Eberline, K-40 and CS-137 only, DO NOT FILTER
Gross Alpha-O	pCi/L	04/02/12 17:54	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	04/02/12 17:54	Out Eberline, Boeing permit, DO NOT FILTER!
Radium 226/228 Combined (AZ-MAP)-OUT	pCi/L	10/04/12 17:54	Out Eberline, Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	10/04/12 17:54	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	10/04/12 17:54	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	10/04/12 17:54	Out Eberline, Boeing permit, DO NOT FILTER!
Containers Supplied:			
2.5 gal Poly (J)	500 mL Amber (K)		
Sample ID: IUJ0496-03 (Trip Blank - Water)		Sampled: 10/07/11 15:00	
Gamma Spec-O	mg/kg	10/06/12 15:00	Out Eberline, K-40 and CS-137 only, DO NOT FILTER
Gross Alpha-O	pCi/L	04/04/12 15:00	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	04/04/12 15:00	Out Eberline, Boeing permit, DO NOT FILTER!
Radium 226/228 Combined (AZ-MAP)-OUT	pCi/L	10/06/12 15:00	Out Eberline, Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	10/06/12 15:00	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	10/06/12 15:00	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	10/06/12 15:00	Out Eberline, Boeing permit, DO NOT FILTER!
Containers Supplied:			
2.5 gal Poly (A)			

Released By	10-10-11 Date/Time	Received By	10-10-11 17:00 Date/Time
Released By	Date/Time	Received By	10/08/11 1000 Date/Time

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received 10/08/11 1000 CoC No. IUJ0496

Container I.D. No. [illegible] Requested TAT (Days) STD P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [ ] No [ ] N/A [X]
4. Custody seals on sample containers dated & signed? Yes [ ] No [ ] N/A [X]
5. Packing material is: Wet [ ] Dry [ ]
6. Number of samples in shipping container: 2 Sample Matrix W
7. Number of containers per sample: ______ (Or see CoC X)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [X] Not preserved [X] pH <2 / N/A Preservative HNO3
13. Describe any anomalies:
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date ______
15. Inspected by [signature] Date: 10/10/11 Time: 0800

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

Ion Chamber Ser. No. ______ Calibration date ______

Alpha Meter Ser. No. ______ Calibration date ______

Beta/Gamma Meter Ser. No. [illegible] 99574 Calibration date 15 JUL 11

LABORATORY REPORT

Aquatic Testing Laboratories

"dedicated to providing quality aquatic toxicity testing"

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

Date: October 13, 2011

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

Laboratory No.: A-11100610-001
Sample I.D.: IUJ0496-02 (Outfall 009)

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

Date Sampled:	10/05/11
Date Received:	10/06/11
Temp. Received:	5.6°C
Chlorine (TRC):	0.0 mg/l
Date Tested:	10/06/11 to 10/12/11

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

Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

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

Result Summary:

Chronic:	NOEC	TUc
Ceriodaphnia Survival:	100%	1.0
Ceriodaphnia Reproduction:	100%	1.0

Quality Control: Reviewed and approved by:

Joseph A. LeMay
Laboratory Director

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0

Aquatic Testing Laboratories

Lab No.: A-11100610-001
Client/ID: Test America – IUJ0496-02 (Outfall 009)

Date Tested: 10/06/11 to 10/12/11

TEST SUMMARY

Test type: Daily static-renewal.
Species: *Ceriodaphnia dubia*.
Age: < 24 hrs; all released within 8 hrs.
Test vessel size: 30 ml.
Number of test organisms per vessel: 1.
Temperature: 25 +/- 1°C.
Dilution water: Mod. hard reconstituted (MHRW).
QA/QC Batch No.: RT-111006.

Endpoints: Survival and Reproduction.
Source: In-laboratory culture.
Food: .1 ml YTC, algae per day.
Test solution volume: 15 ml.
Number of replicates: 10.
Photoperiod: 16/8 hrs. light/dark cycle.
Test duration: 6 days.
Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	23.3
100% Sample	100%	25.6
Sample not statistically significantly less than Control.		

CHRONIC TOXICITY

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

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥15 young per surviving control female	Pass (23.3 young)
≥60% surviving controls had 3 broods	Pass (90% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 17.2%)
Statistically significantly different concentrations relative difference >13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

Ceriodaphnia Survival and Reproduction Test-Survival Day 6

Start Date:	10/6/2011 13:00	Test ID:	11100610c	Sample ID:	Outfall 009
End Date:	10/12/2011 13:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	SRW2-Industrial stormwater
Sample Date:	10/5/2011 17:54	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

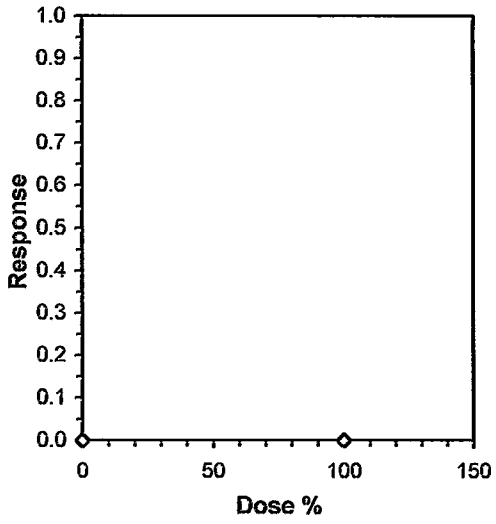
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

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

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

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	10/6/2011 13:00	Test ID:	11100610c	Sample ID:	Outfall 009
End Date:	10/12/2011 13:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	SRW2-Industrial stormwater
Sample Date:	10/5/2011 17:54	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	29.000	10.000	23.000	21.000	25.000	24.000	26.000	27.000	24.000	24.000
100	27.000	25.000	30.000	27.000	27.000	27.000	28.000	13.000	31.000	21.000

			Transform: Untransformed					Rank	1-Tailed	Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
D-Control	23.300	1.0000	23.300	10.000	29.000	22.168	10			24.450	1.0000
100	25.600	1.0987	25.600	13.000	31.000	20.272	10	127.00	82.00	24.450	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.78252	0.905	-1.7976	3.13139
F-Test indicates equal variances (p = 0.99)	1.00958	6.54109		

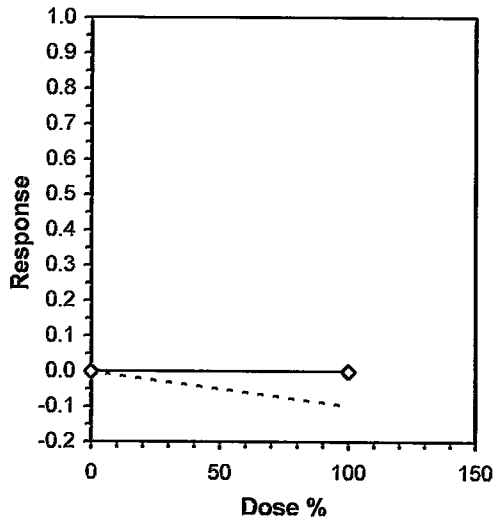
Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates no significant differences

Treatments vs D-Control

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Reviewed by:

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
EPA METHOD 1002.0 Raw Data Sheet

Aquatic Testing Laboratories

Lab No.: A-11100610-001
Client ID: TestAmerica - Outfall 009
Start Date: 10/06/2011

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst Initials:														—	—
Time of Readings:		1330	1330	1330	1330	1330	1330	1330	1315	1315	1330	1330	1330	—	—
Control	DO	8.7	7.6	8.0	6.7	8.2	7.2	8.1	7.4	7.8	7.4	8.2	7.9	—	—
	pH	8.2	7.2	8.1	7.7	8.2	7.4	8.1	7.6	8.2	7.7	8.3	7.6	—	—
	Temp	25.1	25.1	24.7	25.1	24.7	24.6	24.6	24.2	25.0	25.0	24.7	24.8	—	—
100%	DO	8.1	7.1	7.6	2.0	7.8	7.4	8.1	7.4	8.3	7.6	8.6	7.7	—	—
	pH	7.7	7.1	7.4	8.1	7.5	7.5	7.5	7.5	7.6	8.1	7.6	8.1	—	—
	Temp	24.5	24.7	25.1	25.1	24.7	24.6	24.5	24.4	24.8	24.9	24.5	24.8	—	—

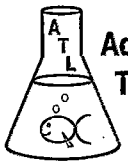
Additional Parameters	Control	100% Sample
Conductivity (umohms)	329	67
Alkalinity (mg/l $CaCO_3$)	68	15
Hardness (mg/l $CaCO_3$)	91	22
Ammonia (mg/l NH_3-N)	<0.1	0.4

Source of Neonates

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

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	3	4	0	0	0	5	12	10	
	4	4	3	4	4	0	0	5	4	3	0	27	10	
	5	10	7	9	7	8	7	9	9	11	7	84	10	
	6	15	0	10	10	14	13	12	14	10	12	110	10	
	7	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	29	10	23	21	25	24	26	27	24	24	233	10	
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	4	0	3	5	0	5	3	20	10	
	4	5	4	5	9	4	0	0	4	0	8	39	10	
	5	7	9	10	14	9	10	10	9	10	0	88	10	
	6	15	12	15	0	14	14	13	0	16	10	109	10	
	7	—	—	—	—	—	—	—	—	—	—	—	—	—
	Total	27	25	30	27	27	27	28	13	31	21	256	10	

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



Aquatic
Testing
Laboratories

CHAIN OF CUSTODY

Subcontract Order - TestAmerica Irvine (IUJ0496)

SENDING LABORATORY:

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

RECEIVING LABORATORY:

Aquatic Testing Laboratories-SUB
4350 Transport Street, Unit 107
Ventura, CA 93003
Phone :(805) 650-0546
Fax: (805) 650-0756
Project Location: California
Receipt Temperature: 5-6 °C Ice: (Y) N

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

Analysis	Units	Expires	Comments
Sample ID: IUJ0496-02 (Outfall 009 (Composite) - Water)		**Sampled: 10/05/11 17:54**	
Bioassay-7 dy Chmic	N/A	10/07/11 05:54	Cerio, EPA/821-R02-013, Sub to Aquatic testing

Containers Supplied:
1 gal Poly (M)

Released By	10-6-11 Date/Time	Received By	10-6-11 13:10 Date/Time
Released By	Date/Time	Received By	Date/Time

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Semi-Annual Outfall 009** **COMPOSITE - FLOW** Stormwater at SW-13
Project Manager: Bronwyn Kelly Sampler: RICK BANACA	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Cl, SO_4, NO_3+NO_2-N, Perchlorate	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Cyanide	Chronic Toxicity							Comments
Outfall 009	W	1L Poly	1	10-5-2011 17:54	HNO_3	2A	X														
Outfall 009 Dup	W	1L Poly	1		HNO_3	2B	X														
Outfall 009	W	1L Amber	2		None	3A, 3B		X													
Outfall 009	W	500 mL Poly	2		None	4A, 4B			X												
Outfall 009	W	500 mL Poly	1		None	5				X											
Outfall 009	W	1L Poly	1		None	6					X										Filter w/in 24hrs of receipt at lab
Outfall 009	W	2.5 Gal Cube	1		None	7A						X									Unfiltered and unpreserved analysis
		500 mL Amber	1		None	7B															
Outfall 009	W	500 mL Poly	1		NaOH	8							X								
Outfall 009	W	1 Gal Poly	1	10-5-2011 17:54	None	9								X							Only test if first or second rain events of the year

COC Page 2 of 2 list the Composite Samples for Outfall 009 for this storm event.

These must be added to the same work order for COC Page 1 of 2 for Outfall 009 for the same event.

Relinquished By	Date/Time:	Received By	Date/Time:
	10-6-2011 12:00		10-6-11 12:00
Relinquished By	Date/Time:	Received By	Date/Time:
	10-6-11 13:10		10-6-11 13:10
Relinquished By	Date/Time:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: ____
48 Hour: ____ 5 Day: ____ Normal: X

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

Data Requirements: (Check)
No Level IV: ____ All Level IV: ____ NPDES Level IV: X

Aquatic
Testing
Laboratories

REFERENCE TOXICANT DATA

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0
REFERENCE TOXICANT - NaCl

Aquatic Testing Laboratories

QA/QC Batch No.: RT-111006

Date Tested: 10/06/11 to 10/12/11

TEST SUMMARY

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

Endpoints: Survival and Reproduction.
Source: In-laboratory culture.
Food: .1 ml YTC, algae per day.
Test solution volume: 20 ml.
Number of replicates: 10.
Photoperiod: 16/8 hrs. light/dark cycle.
Test duration: 6 days.
Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		22.7	
0.25 g/l	100%		22.9	
0.5 g/l	100%		21.6	
1.0 g/l	100%		13.7	*
2.0 g/l	70%		1.7	*
4.0 g/l	0%	*	0	**

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

CHRONIC TOXICITY

Survival LC50	2.3 g/l
Reproduction IC25	0.78 mg/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (22.7 young)
≥60% surviving controls had 3 broods	Pass (90% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 16.2%)
Stat. sig. diff. conc. relative difference >13%	Pass (Stat. sig. diff. conc. Relative difference= 39.6%)
Concentration response relationship acceptable	Pass (Response curve normal)

Ceriodaphnia Survival and Reproduction Test-Survival Day 6

Start Date:	10/6/2011 13:00	Test ID:	RT111006c	Sample ID:	REF-Ref Toxicant
End Date:	10/12/2011 13:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	NACL-Sodium chloride
Sample Date:	10/6/2011	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

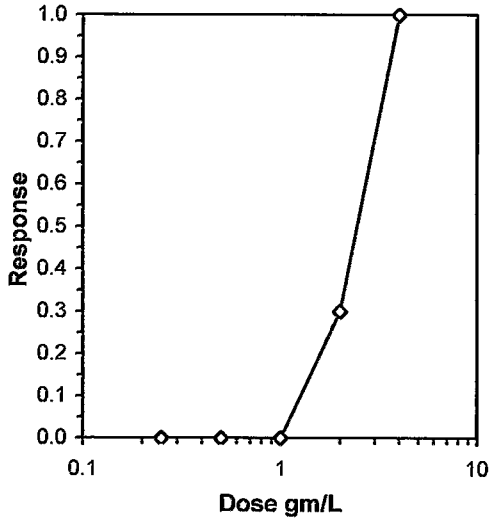
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000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

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	0.7000	0.7000	3	7	10	10	0.1053	0.0500	3	10
4	0.0000	0.0000	10	0	10	10			10	10

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

Trimmed Spearman-Karber

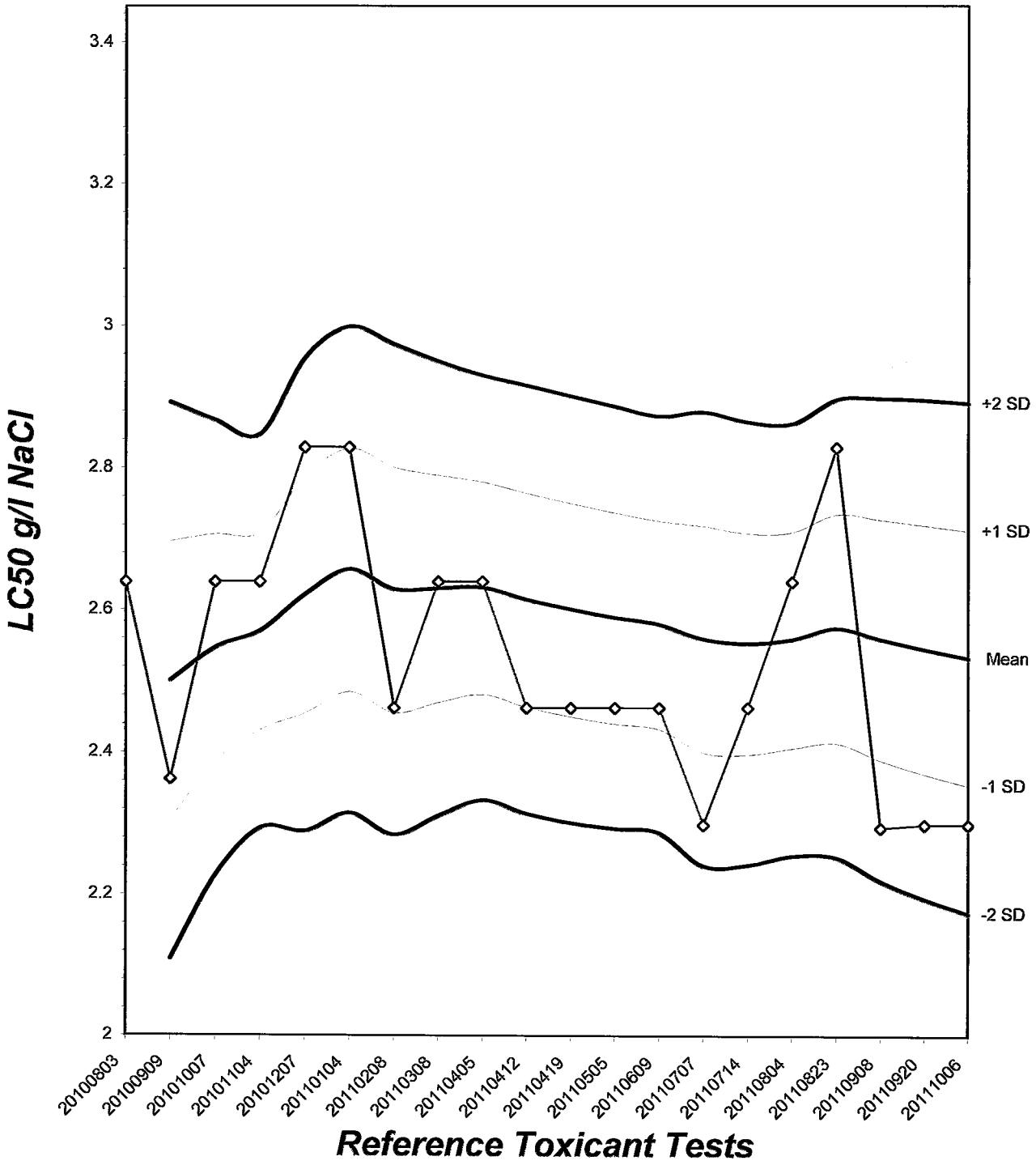
Trim Level	EC50	95% CL	
0.0%	2.2974	1.8793	2.8086
5.0%	2.3288	1.8582	2.9186
10.0%	2.3589	1.8143	3.0670
20.0%	2.4114	1.6236	3.5814
Auto-0.0%	2.2974	1.8793	2.8086



Reviewed by:

Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 7.09



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	10/6/2011 13:00	Test ID:	RT111006c	Sample ID:	REF-Ref Toxicant
End Date:	10/12/2011 13:00	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	NACL-Sodium chloride
Sample Date:	10/6/2011	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia

Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	22.000	24.000	24.000	26.000	25.000	11.000	23.000	25.000	26.000	21.000
0.25	24.000	23.000	23.000	23.000	24.000	25.000	16.000	25.000	24.000	22.000
0.5	21.000	20.000	25.000	27.000	12.000	22.000	23.000	22.000	23.000	21.000
1	9.000	17.000	8.000	17.000	17.000	21.000	10.000	11.000	8.000	19.000
2	3.000	2.000	4.000	2.000	0.000	2.000	2.000	0.000	2.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

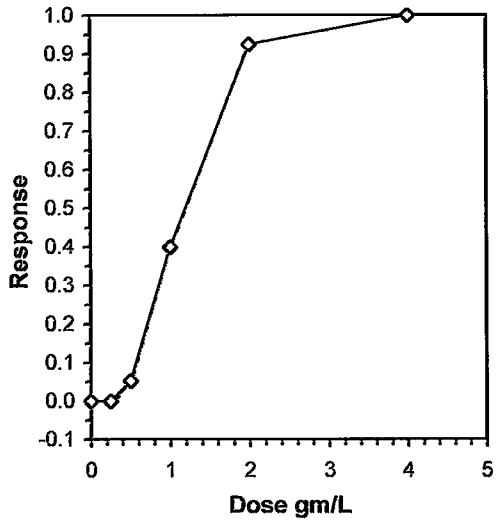
			Transform: Untransformed					Rank	1-Tailed	Isotonic	
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
D-Control	22.700	1.0000	22.700	11.000	26.000	19.486	10			22.800	1.0000
0.25	22.900	1.0088	22.900	16.000	25.000	11.359	10	98.00	76.00	22.800	1.0000
0.5	21.600	0.9515	21.600	12.000	27.000	18.286	10	89.00	76.00	21.600	0.9474
*1	13.700	0.6035	13.700	8.000	21.000	36.260	10	61.00	76.00	13.700	0.6009
*2	1.700	0.0749	1.700	0.000	4.000	78.676	10	55.00	76.00	1.700	0.0746
4	0.000	0.0000	0.000	0.000	0.000	0.000	10			0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.91768	0.947	-1.1452	2.32133
Bartlett's Test indicates unequal variances (p = 6.41E-03)	14.2962	13.2767		

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

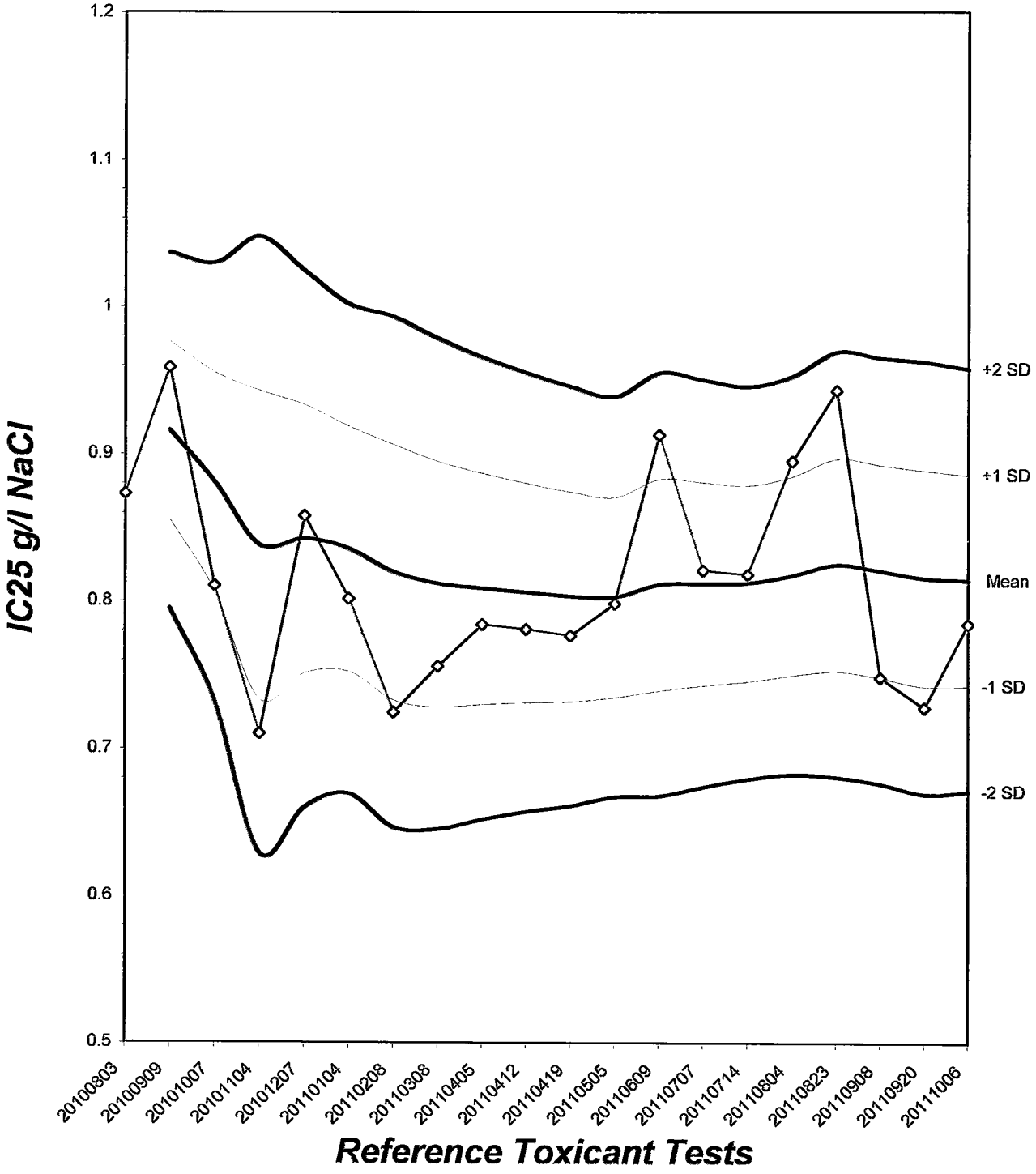
Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL		Skew
IC05	0.4875	0.1363	0.1296	0.5739	-0.7566
IC10	0.5684	0.0960	0.2937	0.6478	-1.3466
IC15	0.6405	0.0768	0.4185	0.7308	-0.9308
IC20	0.7127	0.0741	0.5080	0.8209	-0.7115
IC25	0.7848	0.0746	0.6090	0.9095	-0.2122
IC40	1.0017	0.0885	0.8396	1.1776	0.3021
IC50	1.1917	0.0981	0.9554	1.3396	-0.3414



Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 8.82



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

Aquatic Testing Laboratories

QA/QC No.: RT-111006

Start Date:10/06/2011

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	2	3	0	0	0	4	0	03	0		12	10	
	4	0	0	4	3	4	05	5	0	4		25	10	
	5	8	8	7	9	10	7	8	8	9	7	81	10	
	6	12	13	13	14	11	0	10	12	14	10	109	10	
	*7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	22	24	24	26	25	11	23	25	26	21	227	10	
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	0	4	0	0	0	4	8	10	
	4	4	3	4	4	5	0	4	5	4	0	33	10	
	5	7	8	9	8	7	8	12	7	10	7	83	10	
	6	13	12	10	11	12	13	0	13	10	11	105	10	
	7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	24	23	23	23	24	25	16	25	24	22	229	10	
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	4	0	3	0	0	3	3	13	10	
	4	3	3	4	0	5	0	4	4	0	0	23	10	
	5	7	7	8	10	7	7	8	8	7	7	76	10	
	6	11	10	13	13	0	12	11	10	13	11	104	10	
	7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	21	20	25	27	12	22	23	22	23	21	216	10	

Circled fourth brood not used in statistical analysis.

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

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

Aquatic Testing Laboratories

QA/QC No.: RT-111006

Start Date:10/06/2011

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	3	3	4	0	0	0	4	14	10	
	4	3	4	3	0	0	0	4	4	2	0	20	10	
	5	0	7	0	8	7	7	0	0	6	6	41	10	
	6	6	6	5	6	7	10	6	7	0	9	62	10	
	7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	9	17	8	17	17	21	10	11	8	19	137	10	
2.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	0	0	0	0	0	0	0	10	
	4	0	0	2	0	0	2	0	0	0	X	4	9	
	5	3	2	0	2	0	0	2	0	0	–	9	9	
	6	0	X	2	0	0	0	0	X	2	–	4	7	
	7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	3	2	4	2	0	2	2	0	2	0	17	7	
4.0 g/l	1	X	X	X	X	X	X	X	X	X	X	0	0	
	2	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–	–
	7	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	0	0	0	0	0	0	0	0	0	0	0	0	

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

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Water Chemistries Raw Data Sheet

Aquatic Testing Laboratories

QA/QC No.: RT-111006

Start Date:10/06/2011

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst Initials:														—	—
Time of Readings:		1300	1300	1300	1300	1300	1300	1300	1315	1315	1330	1330	1300	—	—
Control	DO	8.0	7.6	7.7	7.3	8.0	7.1	7.8	7.7	7.8	7.0	7.7	7.6	—	—
	pH	8.4	8.2	8.4	8.1	8.5	8.2	8.5	8.2	8.2	8.1	8.4	8.1	—	—
	Temp	25.1	24.7	24.9	24.7	25.1	25.0	25.0	24.4	24.8	25.0	25.0	24.8	—	—
0.25 g/l	DO	7.9	7.9	7.7	7.3	7.9	6.9	7.9	7.8	7.0	7.1	7.9	7.7	—	—
	pH	8.4	8.3	8.4	8.1	8.5	8.1	8.4	8.2	8.2	8.1	8.4	8.1	—	—
	Temp	25.1	24.8	25.1	24.8	25.2	25.0	25.1	24.3	24.0	24.6	25.4	24.9	—	—
0.5 g/l	DO	7.9	7.9	8.0	7.3	8.0	7.1	8.0	7.6	7.5	7.1	8.0	7.8	—	—
	pH	8.4	8.3	8.4	8.1	8.5	8.2	8.4	8.2	8.2	8.0	8.4	8.1	—	—
	Temp	25.1	24.7	24.8	24.7	24.9	25.0	25.1	24.6	25.6	24.7	25.2	24.8	—	—
1.0 g/l	DO	7.9	8.1	7.9	7.6	7.8	7.4	7.8	7.4	7.5	6.8	7.9	7.7	—	—
	pH	8.4	8.3	8.4	8.2	8.4	8.3	8.4	8.3	8.2	8.0	8.3	8.1	—	—
	Temp	25.0	24.6	25.0	24.7	25.1	25.0	25.3	24.6	24.5	24.7	25.3	24.9	—	—
2.0 g/l	DO	8.0	8.1	7.9	7.7	7.9	7.6	7.7	7.6	7.8	6.5	8.0	7.6	—	—
	pH	8.3	8.4	8.4	8.2	8.4	8.3	8.4	8.2	8.3	8.2	8.3	8.0	—	—
	Temp	24.9	24.7	25.2	24.7	25.0	25.0	25.0	24.4	24.4	24.6	24.8	24.5	—	—
4.0 g/l	DO	8.1	7.9	—	—	—	—	—	—	—	—	—	—	—	—
	pH	8.2	8.3	—	—	—	—	—	—	—	—	—	—	—	—
	Temp	25.1	24.7	—	—	—	—	—	—	—	—	—	—	—	—

Dissolved Oxygen (DO) readings are in mg/l O_2; Temperature (Temp) readings are in °C.

Additional Parameters	Control			High Concentration		
	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (µS)	329	307	333	7531	3180	4260
Alkalinity (mg/l $CaCO_3$)	68	69	68	67	69	74
Hardness (mg/l $CaCO_3$)	91	90	91	88	88	80

Source of Neonates										
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	1A	2B	3B	1C	1D	2F	2G	3G	4H	3H

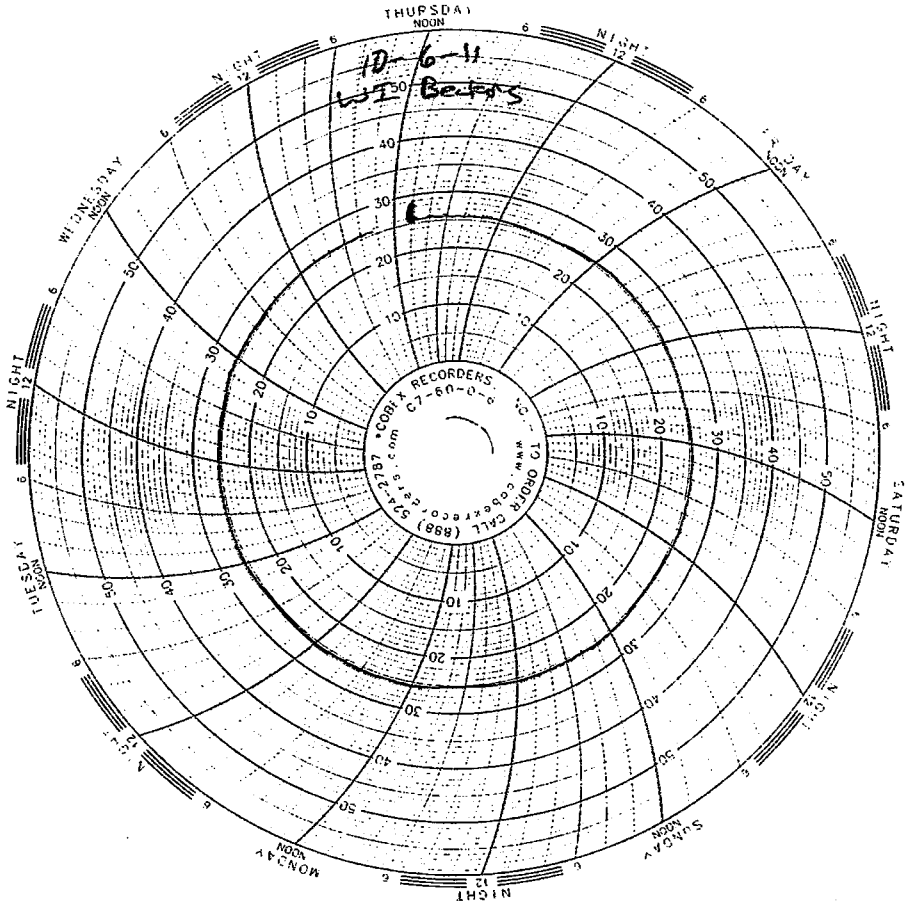
Aquatic Testing Laboratories

Test Temperature Chart

Test No: RT-111006

Date Tested: 10/06/11 to 10/12/11

Acceptable Range: 25+/- 1°C



APPENDIX G

Section 3

Outfall 009 – November 6, 2011

MEC^X Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: IUK0771

Prepared by

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

I. INTRODUCTION

Task Order Title:	Boeing SSFL NPDES
Contract Task Order:	1261.100D.00
Sample Delivery Group:	IUK0771
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 (Composite)	IUK0771-02	G1K080519-001 8963-001	Water	11/6/2011 11:00:00 AM	900. 901.1, 903.1, 904, 905, 906, 245.1, 245.1 Diss, 1613B, SM 2540D, ASTM 5174

II. Sample Management

No anomalies were observed regarding sample management. The samples were received within the temperature limit at TestAmerica-Irvine. The sub-contracted sample for Method 1613B in this SDG was received at TestAmerica-West Sacramento below the temperature limits of 4°C ±2°C, at 1°C; however the sample was not noted to be frozen or damaged. Eberline did not note the temperature upon receipt; 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 TestAmerica-West Sacramento and Eberline. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

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

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: L. Calvin
Date Reviewed: December 8, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review* (8/02).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.

- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.

    - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.

    - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.

- Calibration: Calibration criteria were met.

    - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs ≤20% for the 15 native compounds (calibration by isotope dilution) and ≤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 above the EDL for several target compounds, including all HpCDD and HxCDF isomers and their totals,1,2,3,4,7,8,9-HpCDF, total HpCDF, total TCDD, and OCDD. Some method blank results were reported as EMPCs; however, due to the extent of the method blank contamination, the reviewer deemed it appropriate to use all method blank results to qualify sample results. The method blank

concentration of OCDD was insufficient to qualify the sample result. Sample results for the remaining individual isomer method blank contaminants were qualified as nondetected, "U," at the level of contamination. The result for total HxCDF was also qualified as nondetected, "U," as the peaks comprising the total in the sample were present at comparable concentrations in the method blank. Total results for HpCDD and HpCDF were qualified as estimated, "J," as only a portion of the total was considered method blank contamination.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613, and RPDs were within the laboratory control limit of ≤50%.

- 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 internal standard recoveries for 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 any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Individual isomer EMPCs qualified as nondetected for method blank contamination were not further qualified as EMPCs. Remaining individual isomer EMPCs were qualified as estimated nondetects, "UJ," at the level of the EMPC. The totals for HpCDF and HxCDD were qualified as estimated, "J," as the totals included individual isomers originally reported as EMPCs. 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 METHODS 245.1—Mercury

Reviewed By: P. Meeks
Date Reviewed: December 10, 2011

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 245.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, 28 days for mercury, was met.
- Tuning: Not applicable to this analysis.
- Calibration: Calibration criteria were met. Initial calibration r^2 values were ≥0.995. 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: December 10, 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. All remaining aliquots were preserved within five days of collection and analyzed within 180 days of collection.

- 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. 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. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

- 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: December 10, 2011

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

- Holding Times: The analytical holding time was met.

- Calibration: The balance calibration check log was 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 analysis was performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: 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.

Validated Sample Result Forms IUK0771

Analysis Method 900

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUK0771-02 **Sample Date:** 11/6/2011 11:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	0.563	3	0.366	pCi/L	Jb	J	DNQ
Gross Beta	12587472	1.7	4	0.824	pCi/L	Jb	J	DNQ

Analysis Method 901.1

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUK0771-02 **Sample Date:** 11/6/2011 11:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	0.966	pCi/L	U	U	
Potassium-40	13966002	ND	25	26.2	pCi/L	U	U	

Analysis Method 903.1

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUK0771-02 **Sample Date:** 11/6/2011 11:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.166	1	0.68	pCi/L	U	U	

Analysis Method 904

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUK0771-02 **Sample Date:** 11/6/2011 11:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.166	1	0.291	pCi/L	U	U	

Analysis Method 905

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUK0771-02 **Sample Date:** 11/6/2011 11:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.03	2	0.511	pCi/L	U	U	

Analysis Method 906

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUK0771-02 **Sample Date:** 11/6/2011 11:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-3.07	500	156	pCi/L	U	U	

Analysis Method ASTM 5174-91

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUK0771-02 **Sample Date:** 11/6/2011 11:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total	NA	0.107	1	0.017	pCi/L	Jb	J	DNQ

Analysis Method EPA 245.1

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUK0771-02 **Sample Date:** 11/6/2011 11:00:00 AM

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

Analysis Method EPA 245.1-Diss

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUK0771-02 **Sample Date:** 11/6/2011 11:00:00 AM

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

Analysis Method EPA-5 1613B

Sample Name Outfall 009 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: IUK0771-02 **Sample Date:** 11/6/2011 11:00:00 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	0.0000006	ug/L	J, B	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	0.000006	0.00005	0.0000003	ug/L	J	J	DNQ
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000004	ug/L	J, Q, B	U	B
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000005	ug/L	J, Q	UJ	*III
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000003	ug/L	J, B	U	B
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000004	ug/L	J, Q	UJ	*III
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000003	ug/L	J, Q, B	U	B
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000004	ug/L	J, Q	UJ	*III
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000003	ug/L	J, B	U	B
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.000001	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	0.000001	0.00005	0.0000009	ug/L	J	J	DNQ
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000003	ug/L	J, Q, B	U	B
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.000001	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000005	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000007	ug/L		U	
OCDD	3268-87-9	0.00032	0.0001	0.0000015	ug/L	B		
OCDF	39001-02-0	ND	0.0001	0.0000008	ug/L	J, B	U	B
Total HpCDD	37871-00-4	0.00005	0.00005	0.0000006	ug/L	J, B	J	B, DNQ
Total HpCDF	38998-75-3	0.000016	0.00005	0.0000004	ug/L	J, Q, B	J	B, DNQ, *III
Total HxCDD	34465-46-8	0.000006	0.00005	0.0000004	ug/L	J, Q	J	DNQ, *III
Total HxCDF	55684-94-1	ND	0.00005	0.0000003	ug/L	J, Q, B	U	B
Total PeCDD	36088-22-9	ND	0.00005	0.000001	ug/L		U	
Total PeCDF	30402-15-4	0.000001	0.00005	0.0000009	ug/L	J	J	DNQ
Total TCDD	41903-57-5	ND	0.00001	0.0000005	ug/L		U	
Total TCDF	55722-27-5	ND	0.00001	0.0000007	ug/L		U	

Analysis Method SM 2540D

Sample Name Outfall 009 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: IUK0771-02 **Sample Date:** 11/6/2011 11:00:00 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	J	J	DNQ

APPENDIX G

Section 4

Outfall 009 – November 4, 5, & 6, 2011

Test America Analytical Laboratory Report

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

LABORATORY REPORT

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

Project: Routine Outfall 009
Routine Outfall 009

Sampled: 11/04/11-11/06/11
Received: 11/06/11
Issued: 11/30/11 11:06

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

CASE NARRATIVE

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

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

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

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

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

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

ADDITIONAL INFORMATION: WATER, 1613B, Dioxins/Furans with Totals
Sample: 1
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	CLIENT ID	MATRIX
IUK0771-01	Outfall 009 (Grab)	Water
IUK0771-02	Outfall 009 (Composite)	Water
IUK0771-03	Trip Blank	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

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Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

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Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-01 (Outfall 009 (Grab) - Water)					**Sampled: 11/06/11**				
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	11K2199	1.3	4.7	ND	1	DA	11/16/11	

TestAmerica Irvine

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Project Manager

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water)					**Sampled: 11/06/11**				
Reporting Units: ug/l									
Mercury	EPA 245.1	11K1548	0.10	0.20	ND	1	DB	11/14/11	
Antimony	EPA 200.8	11K1379	0.30	2.0	**0.54**	1	NH	11/12/11	J
Cadmium	EPA 200.8	11K1379	0.10	1.0	ND	1	NH	11/12/11	
Copper	EPA 200.8	11K1379	0.50	2.0	**3.5**	1	NH	11/12/11	
Lead	EPA 200.8	11K1379	0.20	1.0	**1.5**	1	NH	11/12/11	
Thallium	EPA 200.8	11K1379	0.20	1.0	**0.23**	1	NH	11/12/11	J

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 11/06/11**				
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	11K1549	0.10	0.20	ND	1	db	11/14/11	
Antimony	EPA 200.8-Diss	11K1997	0.30	2.0	**0.35**	1	KB1	11/15/11	J
Cadmium	EPA 200.8-Diss	11K1997	0.10	1.0	ND	1	KB1	11/15/11	
Copper	EPA 200.8-Diss	11K1997	0.50	2.0	**4.3**	1	KB1	11/15/11	
Lead	EPA 200.8-Diss	11K1997	0.20	1.0	**0.40**	1	KB1	11/15/11	J
Thallium	EPA 200.8-Diss	11K1997	0.20	1.0	ND	1	KB1	11/15/11	

TestAmerica Irvine

Debby Wilson
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

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

Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 11/06/11**				
Reporting Units: mg/l									
Chloride	EPA 300.0	11K0943	0.30	0.50	**2.0**	1	NN	11/07/11	
Nitrate/Nitrite-N	EPA 300.0	11K0943	0.15	0.26	**0.65**	1	NN	11/07/11	
Sulfate	EPA 300.0	11K0943	0.30	0.50	**4.2**	1	NN	11/07/11	
Total Dissolved Solids	SM2540C	11K1039	1.0	10	**50**	1	MC	11/08/11	
Total Suspended Solids	SM 2540D	11K1382	1.0	10	**6.0**	1	DK1	11/09/11	J
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water)					**Sampled: 11/06/11**				
Reporting Units: ug/l									
Total Cyanide	SM4500CN-E	11K2192	2.2	5.0	ND	1	SLA	11/15/11	

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Project ID: Routine Outfall 009
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Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

8693

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 11/06/11**				
Reporting Units: pCi/L									
Uranium, Total	8693	8693		1	**0.107**	1	NS	11/15/11	Jb
Sample ID: IUK0771-03 (Trip Blank - Water)					**Sampled: 11/04/11**				
Reporting Units: pCi/L									
Uranium, Total	8693	8693		1	ND	1	NS	11/15/11	U

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Sampled: 11/04/11-11/06/11
Received: 11/06/11

900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water)					**Sampled: 11/06/11**				
Reporting Units: pCi/L									
Gross Alpha	900	8693		3	**0.563**	1	DVP	11/16/11	Jb
Gross Beta	900	8693		4	**1.7**	1	DVP	11/16/11	Jb
Sample ID: IUK0771-03 (Trip Blank - Water)					**Sampled: 11/04/11**				
Reporting Units: pCi/L									
Gross Alpha	900	8693		3	**0.019**	1	DVP	11/17/11	U
Gross Beta	900	8693		4	-0.377	1	DVP	11/17/11	U

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Project ID: Routine Outfall 009
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Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water)					**Sampled: 11/06/11**				
Reporting Units: pCi/L									
Cesium-137	901.1	8693		20	ND	1	RFM	11/11/11	U
Potassium-40	901.1	8693		25	ND	1	RFM	11/11/11	U
Sample ID: IUK0771-03 (Trip Blank - Water)					**Sampled: 11/04/11**				
Reporting Units: pCi/L									
Cesium-137	901.1	8693		20	ND	1	RFM	11/11/11	U
Potassium-40	901.1	8693		25	ND	1	RFM	11/11/11	U

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Received: 11/06/11

903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water)					**Sampled: 11/06/11**				
Reporting Units: pCi/L									
Radium-226	903.1	8693		1	**0.166**	1	TM	11/16/11	U
Sample ID: IUK0771-03 (Trip Blank - Water)					**Sampled: 11/04/11**				
Reporting Units: pCi/L									
Radium-226	903.1	8693		1	-0.226	1	TM	11/16/11	U

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Sampled: 11/04/11-11/06/11
Received: 11/06/11

904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water)					**Sampled: 11/06/11**				
Reporting Units: pCi/L									
Radium-228	904	8693		1	**0.166**	1	PAS	11/14/11	U
Sample ID: IUK0771-03 (Trip Blank - Water)					**Sampled: 11/04/11**				
Reporting Units: pCi/L									
Radium-228	904	8693		1	**0.003**	1	PAS	11/14/11	U

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Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water)					**Sampled: 11/06/11**				
Reporting Units: pCi/L									
Strontium-90	905	8693		2	**0.03**	1	NB	11/11/11	U
Sample ID: IUK0771-03 (Trip Blank - Water)					**Sampled: 11/04/11**				
Reporting Units: pCi/L									
Strontium-90	905	8693		2	-0.034	1	NB	11/11/11	U

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Received: 11/06/11

906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water)					**Sampled: 11/06/11**				
Reporting Units: pCi/L									
Tritium	906	8693		500	-3.07	1	WK	11/11/11	U

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Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

EPA-5 1613Bx

Analyte	Method	Batch	MDL	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water) - cont.					**Sampled: 11/06/11**				
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	1314130	0.00000061	0.00005	**0.00002**	1	SO	11/11/11	J, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	1314130	0.00000035	0.00005	**0.0000067**	1	SO	11/11/11	J
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	1314130	0.00000047	0.00005	**0.0000021**	1	SO	11/11/11	J, Q, B
1,2,3,4,7,8-HxCDD	EPA-5 1613B	1314130	0.00000052	0.00005	**0.00000096**	1	SO	11/11/11	J, Q
1,2,3,4,7,8-HxCDF	EPA-5 1613B	1314130	0.00000035	0.00005	**0.0000028**	1	SO	11/11/11	J, B
1,2,3,6,7,8-HxCDD	EPA-5 1613B	1314130	0.00000046	0.00005	**0.0000014**	1	SO	11/11/11	J, Q
1,2,3,6,7,8-HxCDF	EPA-5 1613B	1314130	0.00000032	0.00005	**0.000001**	1	SO	11/11/11	J, Q, B
1,2,3,7,8,9-HxCDD	EPA-5 1613B	1314130	0.00000045	0.00005	**0.0000015**	1	SO	11/11/11	J, Q
1,2,3,7,8,9-HxCDF	EPA-5 1613B	1314130	0.00000036	0.00005	**0.0000014**	1	SO	11/11/11	J, B
1,2,3,7,8-PeCDD	EPA-5 1613B	1314130	0.000001	0.00005	ND	1	SO	11/11/11	
1,2,3,7,8-PeCDF	EPA-5 1613B	1314130	0.00000094	0.00005	**0.0000016**	1	SO	11/11/11	J
2,3,4,6,7,8-HxCDF	EPA-5 1613B	1314130	0.00000031	0.00005	**0.0000011**	1	SO	11/11/11	J, Q, B
2,3,4,7,8-PeCDF	EPA-5 1613B	1314130	0.000001	0.00005	ND	1	SO	11/11/11	
2,3,7,8-TCDD	EPA-5 1613B	1314130	0.00000058	0.00001	ND	1	SO	11/11/11	
2,3,7,8-TCDF	EPA-5 1613B	1314130	0.00000075	0.00001	ND	1	SO	11/11/11	
OCDD	EPA-5 1613B	1314130	0.0000015	0.0001	**0.00032**	1	SO	11/11/11	B
OCDF	EPA-5 1613B	1314130	0.00000085	0.0001	**0.000019**	1	SO	11/11/11	J, B
Total HpCDD	EPA-5 1613B	1314130	0.00000061	0.00005	**0.00005**	1	SO	11/11/11	J, B
Total HpCDF	EPA-5 1613B	1314130	0.0000004	0.00005	**0.000016**	1	SO	11/11/11	J, Q, B
Total HxCDD	EPA-5 1613B	1314130	0.00000048	0.00005	**0.0000069**	1	SO	11/11/11	J, Q
Total HxCDF	EPA-5 1613B	1314130	0.00000034	0.00005	**0.000011**	1	SO	11/11/11	J, Q, B
Total PeCDD	EPA-5 1613B	1314130	0.000001	0.00005	ND	1	SO	11/11/11	
Total PeCDF	EPA-5 1613B	1314130	0.00000099	0.00005	**0.0000016**	1	SO	11/11/11	J
Total TCDD	EPA-5 1613B	1314130	0.00000058	0.00001	ND	1	SO	11/11/11	
Total TCDF	EPA-5 1613B	1314130	0.00000075	0.00001	ND	1	SO	11/11/11	
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)					*61 %*				
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)					*65 %*				
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)					*62 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)					*69 %*				
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)					*68 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)					*69 %*				
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)					*71 %*				
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)					*72 %*				
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)					*69 %*				
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)					*69 %*				
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)					*72 %*				
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)					*73 %*				
Surrogate: 13C-2,3,7,8-TCDD (25-164%)					*68 %*				
Surrogate: 13C-2,3,7,8-TCDF (24-169%)					*70 %*				
Surrogate: 13C-OCDD (17-157%)					*59 %*				
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)					*86 %*				

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Received: 11/06/11

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 009 (Composite) (IUK0771-02) - Water					
EPA 300.0	2	11/06/2011 11:00	11/06/2011 15:18	11/07/2011 16:30	11/07/2011 17:01
Filtration	1	11/06/2011 11:00	11/06/2011 15:18	11/07/2011 14:16	11/07/2011 14:17

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METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11K2199 Extracted: 11/16/11												
Blank Analyzed: 11/16/2011 (11K2199-BLK1)												
Hexane Extractable Material (Oil & Grease)	ND	5.0	1.4	mg/l	DA							
LCS Analyzed: 11/16/2011 (11K2199-BS1)												**MNR1**
Hexane Extractable Material (Oil & Grease)	18.1	5.0	1.4	mg/l	DA	20.0		90	78-114			
LCS Dup Analyzed: 11/16/2011 (11K2199-BSD1)												
Hexane Extractable Material (Oil & Grease)	18.4	5.0	1.4	mg/l	DA	20.0		92	78-114	2	11	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11K1379 Extracted: 11/09/11												
Blank Analyzed: 11/12/2011 (11K1379-BLK1)												
Antimony	ND	2.0	0.30	ug/l	NH							
Cadmium	ND	1.0	0.10	ug/l	NH							
Copper	ND	2.0	0.50	ug/l	NH							
Lead	ND	1.0	0.20	ug/l	NH							
Thallium	ND	1.0	0.20	ug/l	NH							
LCS Analyzed: 11/12/2011 (11K1379-BS1)												
Antimony	79.9	2.0	0.30	ug/l	NH	80.0		100	85-115			
Cadmium	79.6	1.0	0.10	ug/l	NH	80.0		100	85-115			
Copper	77.3	2.0	0.50	ug/l	NH	80.0		97	85-115			
Lead	75.9	1.0	0.20	ug/l	NH	80.0		95	85-115			
Thallium	76.2	1.0	0.20	ug/l	NH	80.0		95	85-115			
Matrix Spike Analyzed: 11/12/2011 (11K1379-MS1)						**Source: IUK0771-02**						
Antimony	72.9	2.0	0.30	ug/l	NH	80.0	0.544	90	70-130			
Cadmium	72.4	1.0	0.10	ug/l	NH	80.0	ND	91	70-130			
Copper	73.8	2.0	0.50	ug/l	NH	80.0	3.49	88	70-130			
Lead	71.2	1.0	0.20	ug/l	NH	80.0	1.54	87	70-130			
Thallium	69.8	1.0	0.20	ug/l	NH	80.0	0.225	87	70-130			
Matrix Spike Analyzed: 11/14/2011 (11K1379-MS2)						**Source: IUK1142-01**						
Antimony	56.1	2.0	0.30	ug/l	NH	80.0	1.21	69	70-130			*M2*
Cadmium	79.1	1.0	0.10	ug/l	NH	80.0	4.31	94	70-130			
Copper	433	2.0	0.50	ug/l	NH	80.0	338	119	70-130			
Lead	104	1.0	0.20	ug/l	NH	80.0	27.8	96	70-130			
Thallium	75.9	1.0	0.20	ug/l	NH	80.0	0.218	95	70-130			
Matrix Spike Dup Analyzed: 11/12/2011 (11K1379-MSD1)						**Source: IUK0771-02**						
Antimony	81.1	2.0	0.30	ug/l	NH	80.0	0.544	101	70-130	11	20	
Cadmium	81.6	1.0	0.10	ug/l	NH	80.0	ND	102	70-130	12	20	
Copper	83.1	2.0	0.50	ug/l	NH	80.0	3.49	99	70-130	12	20	
Lead	80.5	1.0	0.20	ug/l	NH	80.0	1.54	99	70-130	12	20	
Thallium	79.3	1.0	0.20	ug/l	NH	80.0	0.225	99	70-130	13	20	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11K1548 Extracted: 11/14/11												
Blank Analyzed: 11/14/2011 (11K1548-BLK1)												
Mercury	ND	0.20	0.10	ug/l	DB							
LCS Analyzed: 11/14/2011 (11K1548-BS1)												
Mercury	8.24	0.20	0.10	ug/l	DB	8.00		103	85-115			
Matrix Spike Analyzed: 11/14/2011 (11K1548-MS1)						**Source: IUK0678-01**						
Mercury	8.04	0.20	0.10	ug/l	DB	8.00	ND	101	70-130			
Matrix Spike Dup Analyzed: 11/14/2011 (11K1548-MSD1)						**Source: IUK0678-01**						
Mercury	7.97	0.20	0.10	ug/l	DB	8.00	ND	100	70-130	0.8	20	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11K1549 Extracted: 11/14/11												
Blank Analyzed: 11/14/2011 (11K1549-BLK1)												
Mercury	ND	0.20	0.10	ug/l	db							
LCS Analyzed: 11/14/2011 (11K1549-BS1)												
Mercury	8.37	0.20	0.10	ug/l	db	8.00		105	85-115			
Matrix Spike Analyzed: 11/14/2011 (11K1549-MS1)						**Source: IUK0706-02**						
Mercury	8.43	0.20	0.10	ug/l	db	8.00	ND	105	70-130			
Matrix Spike Dup Analyzed: 11/14/2011 (11K1549-MSD1)						**Source: IUK0706-02**						
Mercury	8.53	0.20	0.10	ug/l	db	8.00	ND	107	70-130	1	20	
Batch: 11K1997 Extracted: 11/14/11												
Blank Analyzed: 11/15/2011 (11K1997-BLK1)												
Antimony	ND	2.0	0.30	ug/l	KB1							
Cadmium	ND	1.0	0.10	ug/l	KB1							
Copper	ND	2.0	0.50	ug/l	KB1							
Lead	ND	1.0	0.20	ug/l	KB1							
Thallium	ND	1.0	0.20	ug/l	KB1							
LCS Analyzed: 11/15/2011 (11K1997-BS1)												
Antimony	77.7	2.0	0.30	ug/l	KB1	80.0		97	85-115			
Cadmium	77.0	1.0	0.10	ug/l	KB1	80.0		96	85-115			
Copper	77.5	2.0	0.50	ug/l	KB1	80.0		97	85-115			
Lead	78.0	1.0	0.20	ug/l	KB1	80.0		97	85-115			
Thallium	77.9	1.0	0.20	ug/l	KB1	80.0		97	85-115			

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Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11K1997 Extracted: 11/14/11												
Matrix Spike Analyzed: 11/15/2011 (11K1997-MS1)							**Source: IUK1712-01**					
Antimony	80.9	2.0	0.30	ug/l	KB1	80.0	2.33	98	70-130			
Cadmium	76.8	1.0	0.10	ug/l	KB1	80.0	0.346	96	70-130			
Copper	122	2.0	0.50	ug/l	KB1	80.0	46.3	95	70-130			
Lead	77.2	1.0	0.20	ug/l	KB1	80.0	1.42	95	70-130			
Thallium	75.4	1.0	0.20	ug/l	KB1	80.0	ND	94	70-130			
Matrix Spike Dup Analyzed: 11/15/2011 (11K1997-MSD1)							**Source: IUK1712-01**					
Antimony	79.9	2.0	0.30	ug/l	KB1	80.0	2.33	97	70-130	1	20	
Cadmium	75.8	1.0	0.10	ug/l	KB1	80.0	0.346	94	70-130	1	20	
Copper	121	2.0	0.50	ug/l	KB1	80.0	46.3	94	70-130	0.9	20	
Lead	75.6	1.0	0.20	ug/l	KB1	80.0	1.42	93	70-130	2	20	
Thallium	74.2	1.0	0.20	ug/l	KB1	80.0	ND	93	70-130	2	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11K0943 Extracted: 11/07/11												
Blank Analyzed: 11/07/2011 (11K0943-BLK1)												
Chloride	ND	0.50	0.30	mg/l	NN							
Nitrate/Nitrite-N	ND	0.26	0.15	mg/l	NN							
Sulfate	ND	0.50	0.30	mg/l	NN							
LCS Analyzed: 11/07/2011 (11K0943-BS1)												
Chloride	4.68	0.50	0.30	mg/l	NN	5.00		94	90-110			
Sulfate	9.68	0.50	0.30	mg/l	NN	10.0		97	90-110			
Matrix Spike Analyzed: 11/07/2011 (11K0943-MS1)						**Source: IUK0774-23**						
Chloride	223	10	6.0	mg/l	NN	50.0	179	87	80-120			
Sulfate	122	10	6.0	mg/l	NN	100	24.5	98	80-120			
Matrix Spike Analyzed: 11/07/2011 (11K0943-MS2)						**Source: IUK0876-02**						
Chloride	118	10	6.0	mg/l	NN	50.0	71.0	93	80-120			
Sulfate	221	10	6.0	mg/l	NN	100	112	109	80-120			
Matrix Spike Dup Analyzed: 11/07/2011 (11K0943-MSD1)						**Source: IUK0774-23**						
Chloride	222	10	6.0	mg/l	NN	50.0	179	86	80-120	0.2	20	
Sulfate	129	10	6.0	mg/l	NN	100	24.5	104	80-120	5	20	
Batch: 11K1039 Extracted: 11/08/11												
Blank Analyzed: 11/08/2011 (11K1039-BLK1)												
Total Dissolved Solids	ND	10	1.0	mg/l	MC							
LCS Analyzed: 11/08/2011 (11K1039-BS1)												
Total Dissolved Solids	996	10	1.0	mg/l	MC	1000		100	90-110			

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11K1039 Extracted: 11/08/11												
Duplicate Analyzed: 11/08/2011 (11K1039-DUP1)							**Source: IUK0820-02**					
Total Dissolved Solids	487	10	1.0	mg/l	MC		479			2	10	
Batch: 11K1382 Extracted: 11/09/11												
Blank Analyzed: 11/09/2011 (11K1382-BLK1)												
Total Suspended Solids	ND	10	1.0	mg/l	DK1							
LCS Analyzed: 11/09/2011 (11K1382-BS1)												
Total Suspended Solids	1000	10	1.0	mg/l	DK1	1000		100	85-115			
Duplicate Analyzed: 11/09/2011 (11K1382-DUP1)							**Source: IUK0896-01**					
Total Suspended Solids	30.0	10	1.0	mg/l	DK1		30.0			0	10	
Batch: 11K2192 Extracted: 11/15/11												
Blank Analyzed: 11/15/2011 (11K2192-BLK1)												
Total Cyanide	ND	5.0	2.2	ug/l	SLA							
LCS Analyzed: 11/15/2011 (11K2192-BS1)												
Total Cyanide	104	5.0	2.2	ug/l	SLA	100		104	90-110			
Matrix Spike Analyzed: 11/15/2011 (11K2192-MS1)							**Source: IUK0878-03**					
Total Cyanide	107	5.0	2.2	ug/l	SLA	100	ND	107	70-115			
Matrix Spike Dup Analyzed: 11/15/2011 (11K2192-MSD1)							**Source: IUK0878-03**					
Total Cyanide	102	5.0	2.2	ug/l	SLA	100	ND	102	70-115	5	15	

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METHOD BLANK/QC DATA

8693

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8693 Extracted: 11/15/11												
LCS Analyzed: 11/15/2011 (S111021-03)						**Source:**						
Uranium, Total	60.1	1	N/A	pCi/L	NS	56.5		106	80-120			
Blank Analyzed: 11/15/2011 (S111021-04)						**Source:**						
Uranium, Total	ND	1	N/A	pCi/L	NS				-			*U*
Duplicate Analyzed: 11/15/2011 (S111021-05)						**Source: IUK0771-02**						
Uranium, Total	0.098	1	N/A	pCi/L	NS		0.107		-	9		*Jb*

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METHOD BLANK/QC DATA

900

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8693 Extracted: 11/15/11												
LCS Analyzed: 11/28/2011 (S111021-03)						**Source:**						
Gross Alpha	39.6	3	N/A	pCi/L	DVP	33.7		118	70-130			
Gross Beta	26.8	4	N/A	pCi/L	DVP	28.6		94	70-130			
Blank Analyzed: 11/22/2011 (S111021-04)						**Source:**						
Gross Alpha	-0.078	3	N/A	pCi/L	DVP				-			*U*
Gross Beta	-0.352	4	N/A	pCi/L	DVP				-			*U*
Duplicate Analyzed: 11/22/2011 (S111021-05)						**Source: IUK0771-02**						
Gross Alpha	0.273	3	N/A	pCi/L	DVP		0.563		-	69		*U*
Gross Beta	2.38	4	N/A	pCi/L	DVP		1.7		-	33		*Jb*

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METHOD BLANK/QC DATA

901.1

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8693 Extracted: 11/10/11												
LCS Analyzed: 11/14/2011 (S111021-03)						**Source:**						
Cobalt-60	130	10	N/A	pCi/L	RFM	138		94	80-120			
Cesium-137	145	20	N/A	pCi/L	RFM	148		98	80-120			
Blank Analyzed: 11/14/2011 (S111021-04)						**Source:**						
Cesium-137	ND	20	N/A	pCi/L	RFM				-			*U*
Potassium-40	ND	25	N/A	pCi/L	RFM				-			*U*
Duplicate Analyzed: 11/14/2011 (S111021-05)						**Source: IUK0771-02**						
Cesium-137	ND	20	N/A	pCi/L	RFM		0		-	0		*U*
Potassium-40	ND	25	N/A	pCi/L	RFM		0		-	0		*U*

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METHOD BLANK/QC DATA

903.1

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8693 Extracted: 11/16/11												
LCS Analyzed: 11/16/2011 (S111021-03)						**Source:**						
Radium-226	49.4	1	N/A	pCi/L	TM	50.1		99	80-120			
Blank Analyzed: 11/16/2011 (S111021-04)						**Source:**						
Radium-226	0.11	1	N/A	pCi/L	TM				-			*U*
Duplicate Analyzed: 11/16/2011 (S111021-05)						**Source: IUK0771-02**						
Radium-226	-0.037	1	N/A	pCi/L	TM		0.166		-	0		*U*

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METHOD BLANK/QC DATA

904

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8693 Extracted: 11/14/11												
LCS Analyzed: 11/14/2011 (S111021-03)						**Source:**						
Radium-228	4.8	1	N/A	pCi/L	PAS	4.66		103	60-140			
Blank Analyzed: 11/14/2011 (S111021-04)						**Source:**						
Radium-228	-0.04	1	N/A	pCi/L	PAS				-			*U*
Duplicate Analyzed: 11/14/2011 (S111021-05)						**Source: IUK0771-02**						
Radium-228	0.268	1	N/A	pCi/L	PAS		0.166		-	0		*U*

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METHOD BLANK/QC DATA

905

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8693 Extracted: 11/11/11												
LCS Analyzed: 11/11/2011 (S111021-03)						**Source:**						
Strontium-90	20.7	2	N/A	pCi/L	NB	18.9		110	80-120			
Blank Analyzed: 11/11/2011 (S111021-04)						**Source:**						
Strontium-90	0.171	2	N/A	pCi/L	NB				-			*U*
Duplicate Analyzed: 11/11/2011 (S111021-05)						**Source: IUK0771-02**						
Strontium-90	0.212	2	N/A	pCi/L	NB		0.03		-	0		*U*

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METHOD BLANK/QC DATA

906

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 8693 Extracted: 11/11/11												
LCS Analyzed: 11/11/2011 (S111021-03)						**Source:**						
Tritium	203	500	N/A	pCi/L	WK	227		89	80-120			*Jb*
Blank Analyzed: 11/11/2011 (S111021-04)						**Source:**						
Tritium	-5.89	500	N/A	pCi/L	WK				-			*U*
Duplicate Analyzed: 11/11/2011 (S111021-05)						**Source: IUK0771-02**						
Tritium	-130	500	N/A	pCi/L	WK		-3.07		-	0		*U*

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1314130 Extracted: 11/10/11												
Blank Analyzed: 11/11/2011 (G1K100000130B)						**Source:**						
1,2,3,4,6,7,8-HpCDD	1.5e-006	0.00005	0000005	ug/L	SO				-			*J, Q*
1,2,3,4,6,7,8-HpCDF	ND	0.00005	.000001	ug/L	SO				-			
1,2,3,4,7,8,9-HpCDF	2.8e-006	0.00005	0000007	ug/L	SO				-			*J*
1,2,3,4,7,8-HxCDD	ND	0.00005	0000007	ug/L	SO				-			
1,2,3,4,7,8-HxCDF	3.1e-006	0.00005	0000003	ug/L	SO				-			*J*
1,2,3,6,7,8-HxCDD	ND	0.00005	0000008	ug/L	SO				-			
1,2,3,6,7,8-HxCDF	9.1e-007	0.00005	0000003	ug/L	SO				-			*J, Q*
1,2,3,7,8,9-HxCDD	ND	0.00005	0000009	ug/L	SO				-			
1,2,3,7,8,9-HxCDF	2e-006	0.00005	0000004	ug/L	SO				-			*J*
1,2,3,7,8-PeCDD	ND	0.00005	0000009	ug/L	SO				-			
1,2,3,7,8-PeCDF	ND	0.00005	.000001	ug/L	SO				-			
2,3,4,6,7,8-HxCDF	1e-006	0.00005	0000003	ug/L	SO				-			*J*
2,3,4,7,8-PeCDF	ND	0.00005	.000001	ug/L	SO				-			
2,3,7,8-TCDD	ND	0.00001	0000006	ug/L	SO				-			
2,3,7,8-TCDF	ND	0.00001	0000009	ug/L	SO				-			
OCDD	9e-006	0.0001	0000006	ug/L	SO				-			*J*
OCDF	4.3e-006	0.0001	.000001	ug/L	SO				-			*J*
Total HpCDD	2.3e-006	0.00005	0000005	ug/L	SO				-			*J, Q*
Total HpCDF	3.9e-006	0.00005	0000006	ug/L	SO				-			*J, Q*
Total HxCDD	ND	0.00005	0000007	ug/L	SO				-			
Total HxCDF	8.5e-006	0.00005	0000003	ug/L	SO				-			*J, Q*
Total PeCDD	ND	0.00005	0000009	ug/L	SO				-			
Total PeCDF	ND	0.00005	.000001	ug/L	SO				-			
Total TCDD	1e-006	0.00001	0000006	ug/L	SO				-			*J, Q*
Total TCDF	ND	0.00001	0000009	ug/L	SO				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	*0.0012*			*ug/L*	SO	*0.002*		*59*	*23-140*			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	*0.0012*			*ug/L*	SO	*0.002*		*62*	*28-143*			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	*0.0012*			*ug/L*	SO	*0.002*		*59*	*26-138*			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	*0.0014*			*ug/L*	SO	*0.002*		*68*	*32-141*			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	*0.0012*			*ug/L*	SO	*0.002*		*60*	*26-152*			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	*0.0013*			*ug/L*	SO	*0.002*		*64*	*28-130*			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	*0.0013*			*ug/L*	SO	*0.002*		*67*	*26-123*			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	*0.0013*			*ug/L*	SO	*0.002*		*66*	*29-147*			
Surrogate: 13C-1,2,3,7,8-PeCDD	*0.0012*			*ug/L*	SO	*0.002*		*62*	*25-181*			
Surrogate: 13C-1,2,3,7,8-PeCDF	*0.0011*			*ug/L*	SO	*0.002*		*57*	*24-185*			

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1314130 Extracted: 11/10/11												
Blank Analyzed: 11/11/2011 (G1K100000130B)						**Source:**						
Surrogate: 13C-2,3,4,6,7,8-HxCDF	*0.0014*			*ug/L*	SO	*0.002*		*68*	*28-136*			
Surrogate: 13C-2,3,4,7,8-PeCDF	*0.0013*			*ug/L*	SO	*0.002*		*64*	*21-178*			
Surrogate: 13C-2,3,7,8-TCDD	*0.0012*			*ug/L*	SO	*0.002*		*59*	*25-164*			
Surrogate: 13C-2,3,7,8-TCDF	*0.0012*			*ug/L*	SO	*0.002*		*59*	*24-169*			
Surrogate: 13C-OCDD	*0.0022*			*ug/L*	SO	*0.004*		*56*	*17-157*			
Surrogate: 37Cl4-2,3,7,8-TCDD	*0.00068*			*ug/L*	SO	*0.0008*		*85*	*35-197*			
LCS Analyzed: 11/11/2011 (G1K100000130C)						**Source:**						
1,2,3,4,6,7,8-HpCDD	0.000977	0.00005	.000002	ug/L	SO	0.001		98	70-140			*B*
1,2,3,4,6,7,8-HpCDF	0.00108	0.00005	.000003	ug/L	SO	0.001		108	82-122			
1,2,3,4,7,8,9-HpCDF	0.00109	0.00005	.000004	ug/L	SO	0.001		109	78-138			*B*
1,2,3,4,7,8-HxCDD	0.00107	0.00005	0000005	ug/L	SO	0.001		107	70-164			
1,2,3,4,7,8-HxCDF	0.0011	0.00005	0000004	ug/L	SO	0.001		110	72-134			*B*
1,2,3,6,7,8-HxCDD	0.000921	0.00005	0000004	ug/L	SO	0.001		92	76-134			
1,2,3,6,7,8-HxCDF	0.00113	0.00005	0000004	ug/L	SO	0.001		113	84-130			*B*
1,2,3,7,8,9-HxCDD	0.00101	0.00005	0000004	ug/L	SO	0.001		101	64-162			
1,2,3,7,8,9-HxCDF	0.00112	0.00005	.000000	ug/L	SO	0.001		112	78-130			*B*
1,2,3,7,8-PeCDD	0.000978	0.00005	.000001	ug/L	SO	0.001		98	70-142			
1,2,3,7,8-PeCDF	0.00103	0.00005	.000001	ug/L	SO	0.001		103	80-134			
2,3,4,6,7,8-HxCDF	0.00109	0.00005	0000004	ug/L	SO	0.001		109	70-156			*B*
2,3,4,7,8-PeCDF	0.00104	0.00005	.000001	ug/L	SO	0.001		104	68-160			
2,3,7,8-TCDD	0.000202	0.00001	0000007	ug/L	SO	0.0002		101	67-158			
2,3,7,8-TCDF	0.000226	0.00001	0000008	ug/L	SO	0.0002		113	75-158			
OCDD	0.00207	0.0001	.000002	ug/L	SO	0.002		103	78-144			*B*
OCDF	0.00238	0.0001	.000002	ug/L	SO	0.002		119	63-170			*B*
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	*0.0013*			*ug/L*	SO	*0.002*		*65*	*26-166*			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	*0.00141*			*ug/L*	SO	*0.002*		*71*	*21-158*			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	*0.00132*			*ug/L*	SO	*0.002*		*66*	*20-186*			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	*0.00137*			*ug/L*	SO	*0.002*		*68*	*21-193*			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	*0.00141*			*ug/L*	SO	*0.002*		*71*	*19-202*			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	*0.00156*			*ug/L*	SO	*0.002*		*78*	*25-163*			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	*0.00152*			*ug/L*	SO	*0.002*		*76*	*21-159*			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	*0.0015*			*ug/L*	SO	*0.002*		*75*	*17-205*			
Surrogate: 13C-1,2,3,7,8-PeCDD	*0.00139*			*ug/L*	SO	*0.002*		*69*	*21-227*			
Surrogate: 13C-1,2,3,7,8-PeCDF	*0.00135*			*ug/L*	SO	*0.002*		*68*	*21-192*			

TestAmerica Irvine

Debby Wilson
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

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

Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1314130 Extracted: 11/10/11												
LCS Analyzed: 11/11/2011 (G1K100000130C)						**Source:**						
Surrogate: 13C-2,3,4,6,7,8-HxCDF	*0.00152*			*ug/L*	SO	*0.002*		*76*	*22-176*			
Surrogate: 13C-2,3,4,7,8-PeCDF	*0.00143*			*ug/L*	SO	*0.002*		*71*	*13-328*			
Surrogate: 13C-2,3,7,8-TCDD	*0.00126*			*ug/L*	SO	*0.002*		*63*	*20-175*			
Surrogate: 13C-2,3,7,8-TCDF	*0.00127*			*ug/L*	SO	*0.002*		*64*	*22-152*			
Surrogate: 13C-OCDD	*0.00248*			*ug/L*	SO	*0.004*		*62*	*13-199*			
Surrogate: 37Cl4-2,3,7,8-TCDD	*0.000607*			*ug/L*	SO	*0.0008*		*76*	*31-191*			
LCS Dup Analyzed: 11/11/2011 (G1K100000130L)						**Source:**						
1,2,3,4,6,7,8-HpCDD	0.000968	0.00005	.000002	ug/L	SO	0.001		97	70-140	0.93	50	*B*
1,2,3,4,6,7,8-HpCDF	0.00107	0.00005	.000003	ug/L	SO	0.001		107	82-122	0.85	50	
1,2,3,4,7,8,9-HpCDF	0.00107	0.00005	.000004	ug/L	SO	0.001		107	78-138	1.6	50	*B*
1,2,3,4,7,8-HxCDD	0.00104	0.00005	0000004	ug/L	SO	0.001		104	70-164	2	50	
1,2,3,4,7,8-HxCDF	0.00112	0.00005	.000002	ug/L	SO	0.001		112	72-134	1.5	50	*B*
1,2,3,6,7,8-HxCDD	0.000902	0.00005	0000004	ug/L	SO	0.001		90	76-134	2	50	
1,2,3,6,7,8-HxCDF	0.00106	0.00005	.000002	ug/L	SO	0.001		106	84-130	6.6	50	*B*
1,2,3,7,8,9-HxCDD	0.000999	0.00005	.000000	ug/L	SO	0.001		100	64-162	0.9	50	
1,2,3,7,8,9-HxCDF	0.00107	0.00005	.000002	ug/L	SO	0.001		107	78-130	4.4	50	*B*
1,2,3,7,8-PeCDD	0.000952	0.00005	.000001	ug/L	SO	0.001		95	70-142	2.8	50	
1,2,3,7,8-PeCDF	0.00102	0.00005	.000001	ug/L	SO	0.001		102	80-134	1.3	50	
2,3,4,6,7,8-HxCDF	0.00105	0.00005	.000002	ug/L	SO	0.001		105	70-156	3.8	50	*B*
2,3,4,7,8-PeCDF	0.00102	0.00005	0.000002	ug/L	SO	0.001		102	68-160	2	50	
2,3,7,8-TCDD	0.00019	0.00001	0000007	ug/L	SO	0.0002		95	67-158	5.9	50	
2,3,7,8-TCDF	0.000217	0.00001	0000008	ug/L	SO	0.0002		108	75-158	4.3	50	
OCDD	0.00204	0.0001	.000001	ug/L	SO	0.002		102	78-144	1.3	50	*B*
OCDF	0.00232	0.0001	.000002	ug/L	SO	0.002		116	63-170	2.4	50	*B*
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	*0.00132*			*ug/L*	SO	*0.002*		*66*	*26-166*			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	*0.00142*			*ug/L*	SO	*0.002*		*71*	*21-158*			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	*0.00134*			*ug/L*	SO	*0.002*		*67*	*20-186*			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	*0.00134*			*ug/L*	SO	*0.002*		*67*	*21-193*			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	*0.00141*			*ug/L*	SO	*0.002*		*71*	*19-202*			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	*0.00163*			*ug/L*	SO	*0.002*		*82*	*25-163*			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	*0.00155*			*ug/L*	SO	*0.002*		*78*	*21-159*			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	*0.00153*			*ug/L*	SO	*0.002*		*76*	*17-205*			
Surrogate: 13C-1,2,3,7,8-PeCDD	*0.0014*			*ug/L*	SO	*0.002*		*70*	*21-227*			
Surrogate: 13C-1,2,3,7,8-PeCDF	*0.00129*			*ug/L*	SO	*0.002*		*65*	*21-192*			

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
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	MDL	Units	Analyst	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1314130 Extracted: 11/10/11												
LCS Dup Analyzed: 11/11/2011 (G1K100000130L)						**Source:**						
Surrogate: 13C-2,3,4,6,7,8-HxCDF	*0.00155*			*ug/L*	SO	*0.002*		*77*	*22-176*			
Surrogate: 13C-2,3,4,7,8-PeCDF	*0.00144*			*ug/L*	SO	*0.002*		*72*	*13-328*			
Surrogate: 13C-2,3,7,8-TCDD	*0.0012*			*ug/L*	SO	*0.002*		*60*	*20-175*			
Surrogate: 13C-2,3,7,8-TCDF	*0.0012*			*ug/L*	SO	*0.002*		*60*	*22-152*			
Surrogate: 13C-OCDD	*0.00258*			*ug/L*	SO	*0.004*		*64*	*13-199*			
Surrogate: 37Cl4-2,3,7,8-TCDD	*0.000631*			*ug/L*	SO	*0.0008*		*79*	*31-191*			

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

Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

DATA QUALIFIERS AND DEFINITIONS

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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).
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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Attention: Bronwyn Kelly

Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

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	N/A
EPA 200.8	Water	X	N/A
EPA 245.1-Diss	Water	X	N/A
EPA 245.1	Water	X	N/A
EPA 300.0	Water	X	N/A
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2540C	Water	X	N/A
SM4500CN-E	Water	X	N/A

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

Subcontracted Laboratories

Aquatic Testing Laboratories-SUB *California Cert #1775*
4350 Transport Street, Unit 107 - Ventura, CA 93003
Analysis Performed: Bioassay-7 dy Chrnic
Samples: IUK0771-02

TestAmerica Irvine

Debby Wilson
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

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

Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: EDD + Level 4
Samples: IUK0771-02

Analysis Performed: Gamma Spec
Samples: IUK0771-02, IUK0771-03

Analysis Performed: Gross Alpha
Samples: IUK0771-02, IUK0771-03

Analysis Performed: Gross Beta
Samples: IUK0771-02, IUK0771-03

Analysis Performed: Radium, Combined
Samples: IUK0771-02, IUK0771-03

Analysis Performed: Strontium 90
Samples: IUK0771-02, IUK0771-03

Analysis Performed: Tritium
Samples: IUK0771-02

Analysis Performed: Uranium, Combined
Samples: IUK0771-02, IUK0771-03

Method Performed: 8693
Samples: IUK0771-02, IUK0771-03

Method Performed: 900
Samples: IUK0771-02, IUK0771-03

Method Performed: 901.1
Samples: IUK0771-02, IUK0771-03

Method Performed: 903.1
Samples: IUK0771-02, IUK0771-03

Method Performed: 904
Samples: IUK0771-02, IUK0771-03

Method Performed: 905
Samples: IUK0771-02, IUK0771-03

Method Performed: 906
Samples: IUK0771-02

TestAmerica Irvine

Debby Wilson
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

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

Project ID: Routine Outfall 009
Routine Outfall 009
Report Number: IUK0771

Sampled: 11/04/11-11/06/11
Received: 11/06/11

TestAmerica West Sacramento *NELAC Cert #1119CA, Nevada Cert #CA44*
880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B
Samples: IUK0771-02

TestAmerica Irvine

Debby Wilson
Project Manager

Test America Version 7/19/2010

CHAIN OF CUSTODY FORM

IU K0771

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Routine Outfall 009** **GRAB** Stormwater at SW-13
Project Manager: Bronwyn Kelly Sampler: Rick Banaga Andrew Payne	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	ANALYSIS REQUIRED: Oil & Grease (1664-HEM)
Outfall 009	W	1L Amber	2	11-6-2011 11:06	HCl	1A, 1B	X

Field readings:
(Log in and include in report Temp and pH)

Temp °F = ~~57~~ 58

pH = ~~5.8~~ 7.9

Time of readings = 11:00

Comments

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	Date/Time:	Received By	Date/Time:
	11-6-2011 1310 ~~+2.5~~		11/6/11 1310 ~~+2.5~~
Relinquished By	Date/Time:	Received By	Date/Time:
	11/6/11 1518		
Relinquished By	Date/Time:	Received By	Date/Time:
			11/6/11 1518

Turn-around time: (Check)

24 Hour: _____ 72 Hour: _____ 10 Day: _____

48 Hour: _____ 5 Day: _____ Normal: X

Sample Integrity: (Check)

Intact: _____ On Ice: _____ 3.4

Data Requirements: (Check)

No Level IV: _____ All Level IV: _____ NPDES Level IV: X

CHAIN OF CUSTODY FORM

IIIK0771

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Routine Outfall 009** **COMPOSITE** Stormwater at SW-13
Project Manager: Bronwyn Kelly Sampler: Rick Banagan Andrew Payne	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Tl	TCDD (and all congeners)	Cl, SO_4, NO_3+NO_2-N	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Tl	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Chronic Toxicity	Cyanide							Comments
Outfall 009	W	1L Poly	1	11-6-2011 11:00	HNO_3	2A	X														
Outfall 009 Dup	W	1L Poly	1		HNO_3	2B	X														
Outfall 009	W	1L Amber	2		None	3A, 3B		X													
Outfall 009	W	500 mL Poly	2		None	4A, 4B			X												
Outfall 009	W	500 mL Poly	1		None	5				X											
Outfall 009	W	1L Poly	1		None	6					X										Filter w/in 24hrs of receipt at lab
Outfall 009	W	2.5 Gal Cube	1		None	7A						X									Unfiltered and unpreserved analysis
		500 mL Amber	1		None	7B															
Outfall 009	W	1 Gal Poly	1		None	8							X								**Only test if first or second rain events of the year**
Outfall 009	W	500 mL Poly	1	11-6-2011 11:00	NaOH	9								X							

COC Page 2 of 2 list the Composite Samples for Outfall 009 for this storm event.

These must be added to the same work order for COC Page 1 of 2 for Outfall 009 for the same event.

Relinquished By	Date/Time:	Received By	Date/Time:
Rick Banagan	11-6-2011 ~~1237~~ VP 1310	Vince Padilla	11/6/11 1310 ~~1239~~ VP
Relinquished By	Date/Time:	Received By	Date/Time:
Vince Padilla	11/6/11 1518		
Relinquished By	Date/Time:	Received By	Date/Time:

Turn-around time: (Check)

24 Hour: _____ 72 Hour: _____ 10 Day: _____

48 Hour: _____ 5 Day: _____ Normal: X

Sample Integrity: (Check)

Intact: _____ On Ice: _____

Data Requirements: (Check)

No Level IV: _____ All Level IV: _____ NPDES Level IV: X

LABORATORY REPORT

Aquatic Testing Laboratories

"dedicated to providing quality aquatic toxicity testing"

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

Date: November 14, 2011

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

Laboratory No.: A-11110701-001
Sample I.D.: IUK0771-02 (Outfall 009)

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

Date Sampled:	11/06/11
Date Received:	11/07/11
Temp. Received:	0.8°C
Chlorine (TRC):	0.0 mg/l
Date Tested:	11/07/11 to 11/14/11

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

Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

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

Result Summary:

Chronic:	NOEC	TUc
Ceriodaphnia Survival:	100%	1.0
Ceriodaphnia Reproduction:	100%	1.0

Quality Control: Reviewed and approved by:

Joseph A. LeMay
Laboratory Director

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0

Aquatic Testing Laboratories

Lab No.: A-11110701-001
Client/ID: Test America - IUK0771-02 (Outfall 009)

Date Tested: 11/07/11 to 11/14/11

TEST SUMMARY

Test type: Daily static-renewal.
Species: *Ceriodaphnia dubia*.
Age: < 24 hrs; all released within 8 hrs.
Test vessel size: 30 ml.
Number of test organisms per vessel: 1.
Temperature: 25 +/- 1°C.
Dilution water: Mod. hard reconstituted (MHRW).
QA/QC Batch No.: RT-111107.

Endpoints: Survival and Reproduction.
Source: In-laboratory culture.
Food: .1 ml YTC, algae per day.
Test solution volume: 15 ml.
Number of replicates: 10.
Photoperiod: 16/8 hrs. light/dark cycle.
Test duration: 7 days.
Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	24.3
100% Sample	100%	26.0
Sample not statistically significantly less than Control.		

CHRONIC TOXICITY

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

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥15 young per surviving control female	Pass (24.3 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 12.3%)
Statistically significantly different concentrations relative difference >13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date:	11/7/2011 14:00	Test ID:	11110701c	Sample ID:	Outfall 009
End Date:	11/14/2011 13:30	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	SRW2-Industrial stormwater
Sample Date:	11/6/2011 11:00	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia

Comments:

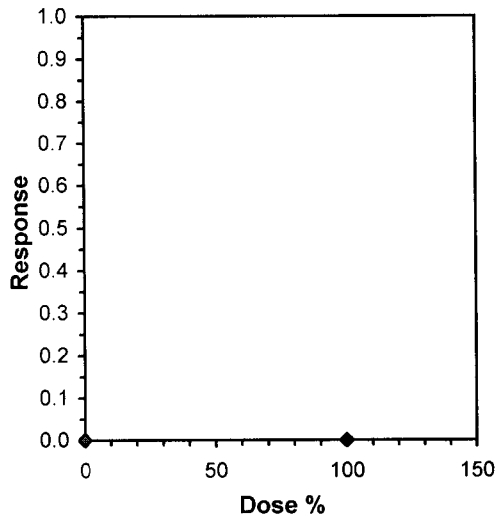
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

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

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

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Reviewed by:

Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	11/7/2011 14:00	Test ID:	11110701c	Sample ID:	Outfall 009
End Date:	11/14/2011 13:30	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	SRW2-Industrial stormwater
Sample Date:	11/6/2011 11:00	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

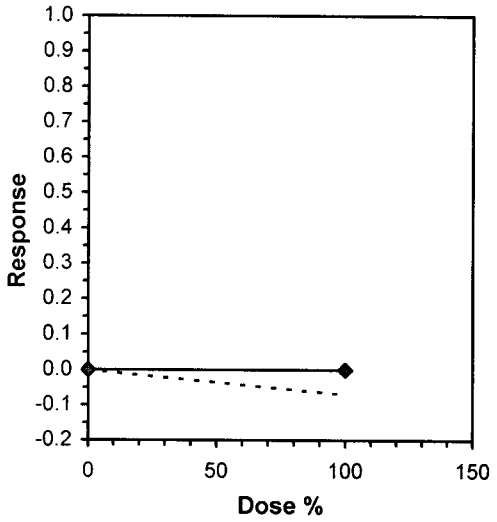
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	24.000	22.000	24.000	31.000	27.000	22.000	28.000	26.000	19.000
100	28.000	26.000	24.000	21.000	27.000	29.000	20.000	23.000	30.000	32.000

			Transform: Untransformed					1-Tailed			Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
D-Control	24.300	1.0000	24.300	19.000	31.000	15.404	10				25.150	1.0000
100	26.000	1.0700	26.000	20.000	32.000	15.169	10	-0.989	1.734	2.982	25.150	1.0000

Auxiliary Tests	Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.96848		0.905		0.07056	-0.9174
F-Test indicates equal variances (p = 0.88)	1.11023		6.54109			
Hypothesis Test (1-tail, 0.05)	**MSDu**	**MSDp**	**MSB**	**MSE**	**F-Prob**	**df**
Homoscedastic t Test indicates no significant differences	2.98171	0.1227	14.45	14.7833	0.33593	1, 18
Treatments vs D-Control						

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Reviewed by:

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
EPA METHOD 1002.0 Raw Data Sheet

Aquatic Testing Laboratories

Lab No.: A-11110701-001
Client ID: TestAmerica - Outfall 009
Start Date: 11/07/2011

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst Initials:															
Time of Readings:		1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1330
Control	DO	8.1	8.3	9.0	6.7	8.6	7.8	8.0	6.6	8.0	7.3	8.1	7.6	8.6	8.1
	pH	8.2	7.8	8.0	7.8	7.9	7.9	8.3	7.5	8.0	7.7	8.1	7.8	7.9	8.1
	Temp	24.6	24.4	24.2	24.3	24.7	24.6	24.6	24.7	24.7	24.4	24.7	24.7	24.7	24.7
100%	DO	8.9	8.4	9.1	6.7	8.9	7.7	8.6	6.9	7.3	7.0	7.7	7.0	8.1	7.2
	pH	7.5	7.9	7.5	7.9	7.2	8.1	7.6	7.8	7.6	8.1	7.9	8.1	7.5	8.0
	Temp	24.2	24.3	24.3	24.5	24.3	24.6	24.4	24.3	24.7	24.2	24.9	24.7	24.3	24.4

Additional Parameters	Control	100% Sample
Conductivity (umohms)	339	70
Alkalinity (mg/l $CaCO_3$)	141	14
Hardness (mg/l $CaCO_3$)	97	20
Ammonia (mg/l NH_3-N)	<0.1	0.4

Source of Neonates										
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	3B	1D	1E	2D	2F	2I	1A	4A	6B	4J

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	0	0	0	0	0	2	2	10	
	4	3	3	4	5	3	4	3	4	5	0	34	10	
	5	0	9	6	4	12	9	0	8	7	7	62	10	
	6	7	0	0	15	0	14	9	16	0	0	61	10	
	7	10	12	12	0	16	(15)	10	0	14	10	84	10	
	Total	20	24	22	24	31	27	22	28	26	19	243	10	
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	2	2	0	2	3	0	3	0	0	0	12	10	
	4	0	0	3	0	0	2	0	3	3	3	14	10	
	5	12	7	0	9	0	10	0	7	10	0	55	10	
	6	14	0	7	10	8	0	7	0	0	11	57	10	
	7	0	17	14	0	16	17	10	13	17	18	122	10	
	Total	28	26	24	21	27	29	20	23	30	32	260	10	

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

Aquatic
Testing
Laboratories

CHAIN OF CUSTODY

Subcontract Order - TestAmerica Irvine (IUK0771)

SENDING LABORATORY:

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

RECEIVING LABORATORY:

Aquatic Testing Laboratories-SUB
4350 Transport Street, Unit 107
Ventura, CA 93003
Phone :(805) 650-0546
Fax: (805) 650-0756
Project Location: California
Receipt Temperature: 0.8 °C Ice: (Y) / N

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

Analysis	Units	Expires	Comments
Sample ID: IUK0771-02 (Outfall 009 (Composite) - Water) Sampled: **11/06/11 11:00**			
Bioassay-7 dy Chrnic	N/A	11/07/11 23:00	Cerio, EPA/821-R02-013, Sub to Aquatic testing
Containers Supplied: 1 gal Poly (K)			

Released By	11-7-11 8:30 Date/Time	Received By	11-7-11 8:30 Date/Time
Released By	11-7-11 12:35 Date/Time	Received By	11-7-11 12:35 Date/Time

Aquatic
Testing
Laboratories

REFERENCE TOXICANT DATA

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0
REFERENCE TOXICANT - NaCl

Aquatic Testing Laboratories

QA/QC Batch No.: RT-111107

Date Tested: 11/07/11 to 11/14/11

TEST SUMMARY

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

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

RESULTS SUMMARY

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		23.3	
0.25 g/l	100%		23.1	
0.5 g/l	100%		23.0	
1.0 g/l	100%		13.3	*
2.0 g/l	60%	*	1.1	**
4.0 g/l	0%	*	0	**

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

CHRONIC TOXICITY

Survival LC50	2.1 g/l
Reproduction IC25	0.78 mg/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (23.3 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 12.5%)
Stat. sig. diff. conc. relative difference >13%	Pass (Stat. sig. diff. conc. Relative difference= 42.9%)
Concentration response relationship acceptable	Pass (Response curve normal)

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date:	11/7/2011 14:00	Test ID:	RT111107	Sample ID:	REF-Ref Toxicant
End Date:	11/14/2011 13:30	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	NACL-Sodium chloride
Sample Date:	11/7/2011	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

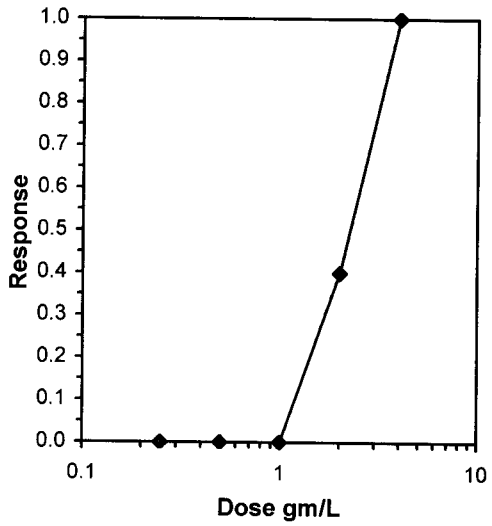
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000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

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
*2	0.6000	0.6000	4	6	10	10	0.0433	0.0500	4	10
4	0.0000	0.0000	10	0	10	10			10	10

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	1	2	1.41421	
Treatments vs D-Control				

Trimmed Spearman-Karber

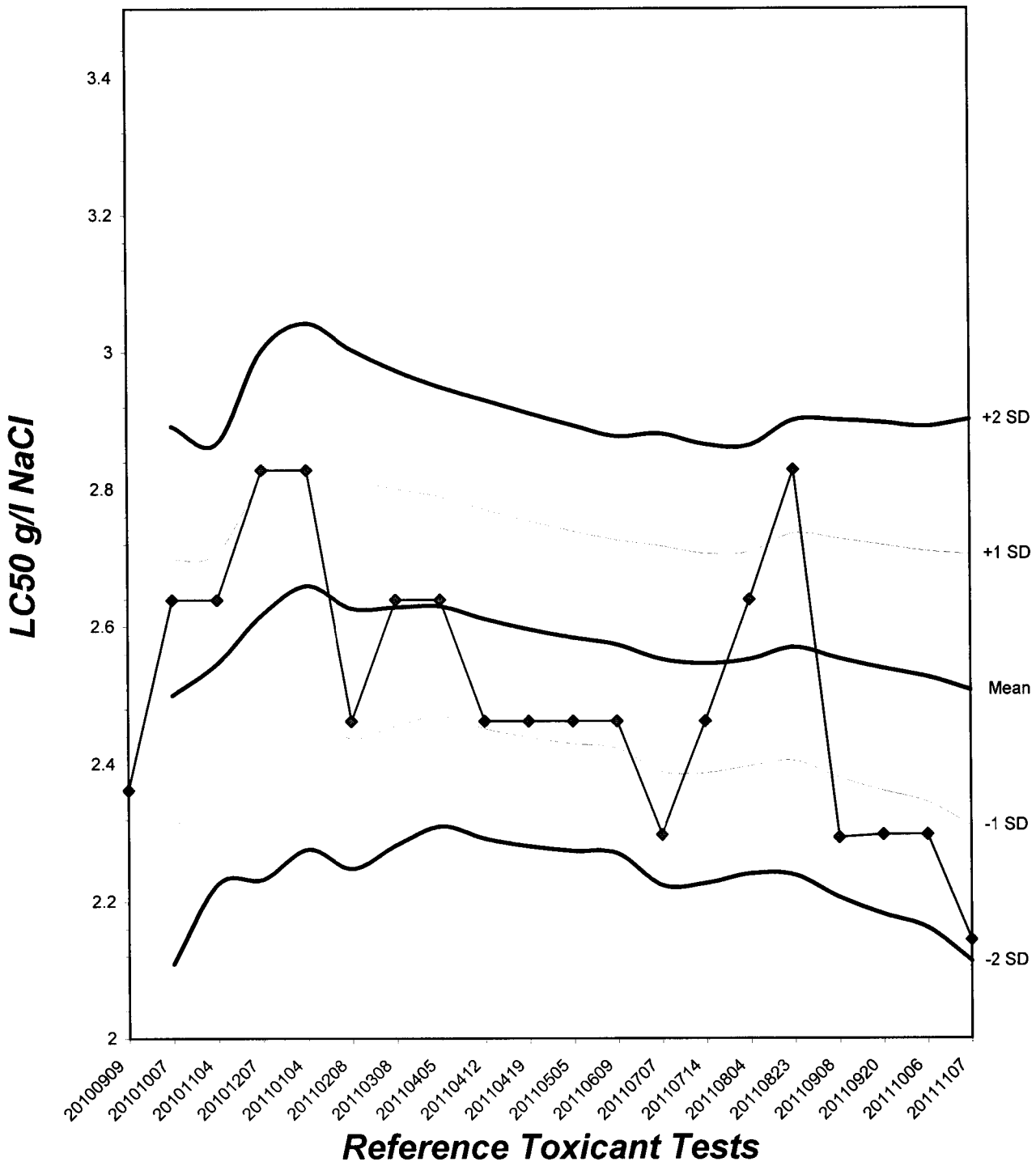
Trim Level	EC50	95% CL	
0.0%	2.1435	1.7293	2.6571
5.0%	2.1584	1.6984	2.7429
10.0%	2.1732	1.6538	2.8556
20.0%	2.2021	1.5017	3.2291
Auto-0.0%	2.1435	1.7293	2.6571



Reviewed by:

Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 7.87



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date:	11/7/2011 14:00	Test ID:	RT111107	Sample ID:	REF-Ref Toxicant
End Date:	11/14/2011 13:30	Lab ID:	CAATL-Aquatic Testing Labs	Sample Type:	NACL-Sodium chloride
Sample Date:	11/7/2011	Protocol:	FWCH EPA	Test Species:	CD-Ceriodaphnia dubia
Comments:					

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	17.000	21.000	18.000	23.000	29.000	26.000	22.000	26.000	26.000	25.000
0.25	20.000	20.000	21.000	22.000	26.000	27.000	27.000	27.000	19.000	22.000
0.5	21.000	25.000	20.000	24.000	22.000	25.000	26.000	23.000	23.000	21.000
1	18.000	13.000	11.000	14.000	14.000	18.000	11.000	12.000	11.000	11.000
2	0.000	2.000	0.000	0.000	3.000	2.000	2.000	0.000	2.000	0.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

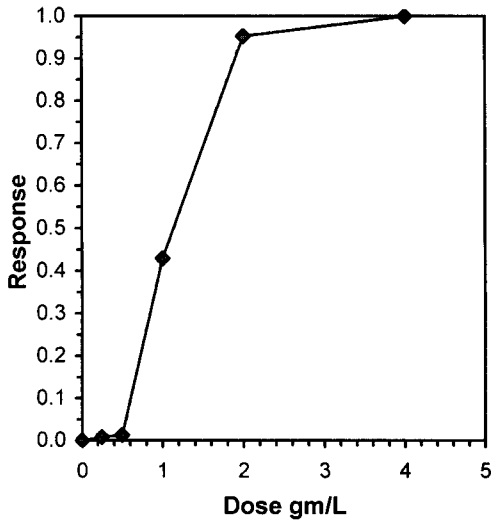
			Transform: Untransformed					1-Tailed			Isotonic	
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
D-Control	23.300	1.0000	23.300	17.000	29.000	16.443	10				23.300	1.0000
0.25	23.100	0.9914	23.100	19.000	27.000	14.205	10	0.147	2.137	2.907	23.100	0.9914
0.5	23.000	0.9871	23.000	20.000	26.000	8.696	10	0.221	2.137	2.907	23.000	0.9871
*1	13.300	0.5708	13.300	11.000	18.000	20.682	10	7.351	2.137	2.907	13.300	0.5708
2	1.100	0.0472	1.100	0.000	3.000	108.838	10				1.100	0.0472
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.96579	0.94	0.05969	-0.7066
Bartlett's Test indicates equal variances (p = 0.30)	3.67174	11.3449		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs D-Control	0.5	1	0.70711		2.90662	0.12475	241.892	9.25278	3.7E-09	3, 36

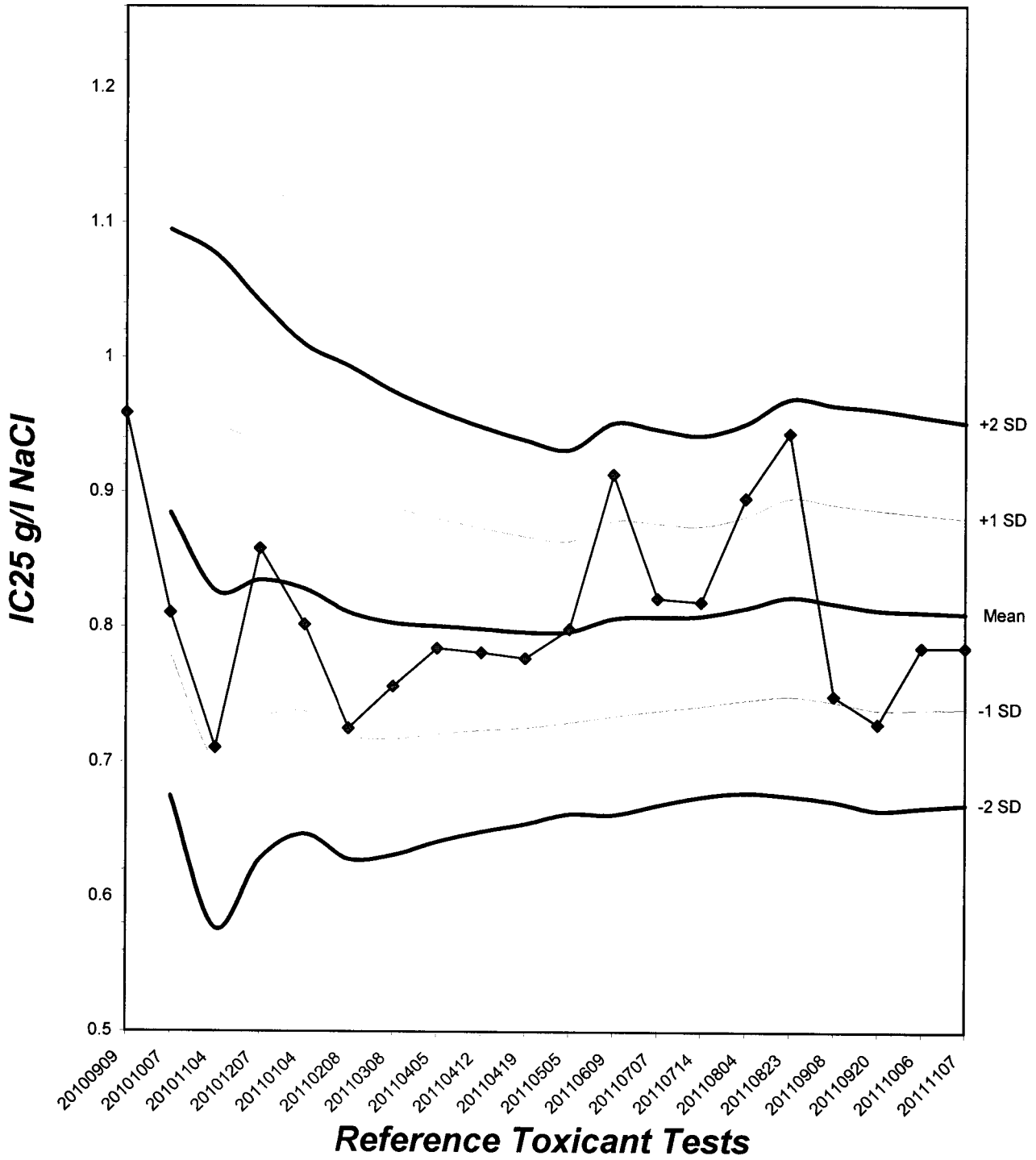
Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL		Skew
IC05	0.5446	0.1401	0.1355	0.5674	-1.4215
IC10	0.6046	0.0502	0.4649	0.6349	-2.6554
IC15	0.6647	0.0393	0.5603	0.7036	-0.5268
IC20	0.7247	0.0399	0.6198	0.7733	-0.2981
IC25	0.7848	0.0417	0.6836	0.8513	-0.0663
IC40	0.9649	0.0549	0.8651	1.0849	0.4812
IC50	1.1352	0.0713	0.9835	1.2504	-0.1627



Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 8.73



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

Aquatic Testing Laboratories

QA/QC No.: RT-111107

Start Date:11/07/2011

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	3	4	0	0	0	0	0	0	3	10	10	
	4	3	0	6	4	5	4	3	4	6	0	35	10	
	5	4	0	0	0	10	8	0	10	7	0	39	10	
	6	10	6	8	7	14	0	7	0	0	9	61	10	
	7	0	12	0	12	0	14	12	12	13	13	88	10	
	Total	17	21	18	23	29	26	22	26	26	25	233	10	
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	0	0	2	0	0	0	2	10	
	4	0	3	3	3	4	5	0	4	3	4	29	10	
	5	3	3	2	0	6	10	12	12	6	0	54	10	
	6	7	0	0	7	16	0	0	0	0	7	37	10	
	7	10	14	16	12	0	12	13	11	10	11	109	10	
	Total	20	20	21	22	26	27	27	27	19	22	231	10	
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	0	0	0	0	0	2	2	10	
	4	3	3	4	4	3	3	4	0	4	0	28	10	
	5	0	7	4	0	0	0	6	3	5	0	25	10	
	6	7	0	0	9	7	8	0	7	0	6	44	10	
	7	11	15	12	11	12	14	16	13	14	13	131	10	
	Total	21	25	20	24	22	25	26	23	23	21	230	10	

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

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

Aquatic Testing Laboratories

QA/QC No.: RT-111107

Start Date:11/07/2011

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	2	0	0	0	0	0	0	0	0	0	2	10	
	4	0	3	0	0	3	3	0	>	0	0	12	10	
	5	6	3	0	0	0	0	0	0	0	0	9	10	
	6	0	0	4	6	4	5	3	2	3	3	30	10	
	7	10	7	7	8	7	10	8	7	8	8	80	10	
	Total	18	13	11	14	14	18	11	12	11	11	133	10	
2.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	
	2	0	0	0	0	0	0	0	0	0	0	0	10	
	3	0	0	0	0	0	0	0	0	0	0	0	10	
	4	0	0	0	0	0	0	0	0	0	0	0	10	
	5	0	0	0	0	0	0	0	0	0	0	0	10	
	6	0	2	0	0	3	0	2	0	0	0	7	10	
	7	X	0	X	X	0	2	0	X	2	0	4	6	
	Total	0	2	0	0	3	2	2	0	2	0	11	6	
4.0 g/l	1	X	X	X	X	X	X	X	X	X	X	0	0	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	-	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	X	X	X	X	X	X	X	X	X	X	0	0	

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

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Water Chemistries Raw Data Sheet

Aquatic Testing Laboratories

QA/QC No.: RT-111107

Start Date:11/07/2011

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst Initials:		[illegible]													
Time of Readings:		1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400	1330
Control	DO	8.1	8.3	8.2	8.0	7.9	8.0	7.7	7.2	7.1	7.8	8.0	7.9	8.7	7.6
	pH	8.2	8.3	8.2	8.1	8.3	8.2	8.3	8.2	8.3	8.2	8.2	8.1	8.3	8.1
	Temp	24.5	24.6	24.3	24.7	24.7	24.8	24.5	24.5	24.8	25.1	25.0	24.7	24.9	24.3
0.25 g/l	DO	8.4	8.6	8.9	8.7	8.7	7.9	8.8	7.2	7.5	7.7	8.1	7.8	8.5	7.2
	pH	8.2	8.2	8.2	8.1	8.3	8.2	8.3	8.1	8.2	8.1	8.2	8.1	8.3	8.1
	Temp	24.8	24.3	24.5	24.7	24.6	24.7	24.7	24.5	24.8	25.1	24.8	24.8	24.7	24.5
0.5 g/l	DO	8.2	8.3	8.4	8.0	8.5	7.8	8.3	7.2	7.3	7.6	8.2	7.7	8.1	7.4
	pH	8.2	8.1	8.2	8.3	8.2	8.2	8.3	8.2	8.2	8.1	8.2	8.1	8.3	8.1
	Temp	24.9	24.5	24.5	24.6	24.6	24.7	24.5	24.6	25.0	25.0	25.1	24.8	24.9	24.5
1.0 g/l	DO	8.3	8.4	8.8	8.5	8.7	7.7	8.6	7.0	8.1	7.6	7.8	7.7	8.1	7.3
	pH	8.2	8.2	8.2	8.3	8.2	8.1	8.3	8.1	8.2	8.1	8.2	8.0	8.3	8.1
	Temp	25.1	24.6	24.8	24.6	24.7	24.5	24.5	24.4	25.1	24.9	25.3	24.7	24.7	24.7
2.0 g/l	DO	8.2	8.5	8.0	7.1	8.0	7.7	7.3	7.0	7.5	7.5	7.1	7.6	7.8	7.2
	pH	8.2	8.2	8.1	8.2	8.1	8.1	8.2	8.1	8.1	8.1	8.2	8.0	8.2	8.1
	Temp	25.3	24.5	24.8	24.7	24.8	24.5	24.8	24.7	25.1	24.8	25.4	24.7	24.7	24.7
4.0 g/l	DO	8.0	8.3	—	—	—	—	—	—	—	—	—	—	—	—
	pH	8.1	8.1	—	—	—	—	—	—	—	—	—	—	—	—
	Temp	25.6	24.3	—	—	—	—	—	—	—	—	—	—	—	—

Dissolved Oxygen (DO) readings are in mg/l O_2; Temperature (Temp) readings are in °C.

Additional Parameters	Control			High Concentration		
	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (µS)	339	341	337	7290	3130	3162
Alkalinity (mg/l $CaCO_3$)	74	71	70	71	72	71
Hardness (mg/l $CaCO_3$)	97	94	93	97	98	93

Source of Neonates

Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	3B	1D	1E	2D	2F	2I	1A	4A	4B	4J

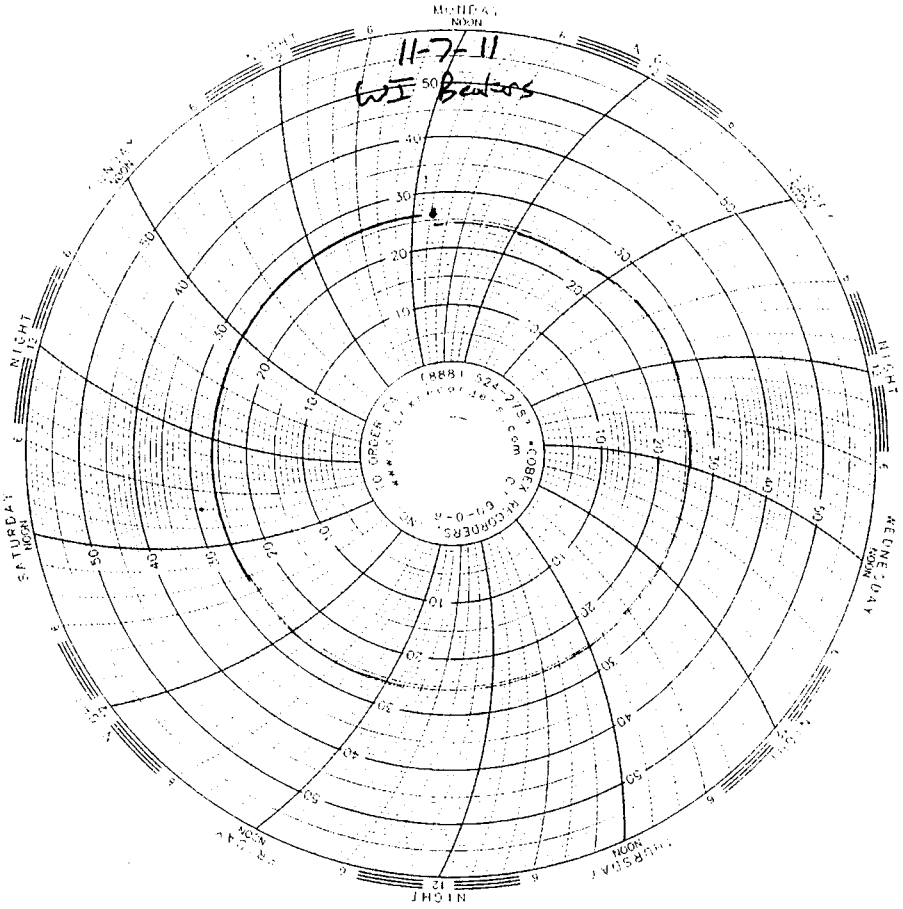
Aquatic Testing Laboratories

Test Temperature Chart

Test No: RT-111107

Date Tested: 11/07/11 to 11/14/11

Acceptable Range: 25+/- 1°C



EBERLINE SERVICES

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November 29, 2011

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

Reference: **Test America-Irvine IUK0771**
Eberline Analytical Report S111021-8693
Sample Delivery Group 8693

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for two water samples received under Test America Job No. IUK0771. The samples were received on November 8, 2011.

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

Sincerely,

Joseph Verville
Client Services Manager

NJV/mw

Enclosure: Level IV CLP-like Data Package CD

1.0 General Comments

Sample delivery group 8693 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 samples were 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 samples as received i.e. the samples were 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 volumes.

2.0 Quality Control

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, and duplicate analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

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

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

4.0 Analysis Notes

4.1 Gross Alpha/Gross Beta Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.2 Tritium Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.3 Strontium-90 Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.4 Radium-226 Analysis –No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.5 Radium-228 Analysis - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits

4.6 Total Uranium Analysis - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.7 Gamma Spectroscopy – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits. The gamma spectroscopy planchets were counted for sufficient time to meet the required Cs-137 detection limit of 20 pCi/L. As a consequence of keying to the Cs-137 RDL, the detection limit for K-40 was not achieved for the duplicate analysis.

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."

Joseph Verville
Client Services Manager

11/29/11
Date

EBERLINE ANALYTICAL
SDG 8693

SDG 8693	Client Test America, Inc.
Contact Joseph Verville	Contract IUK0771

SUMMARY DATA SECTION

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Prepared by

Reviewed by

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	11/29/11