APPENDIX G

Section 10

Outfall 019 – March 30, 2012

MECX Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-6927-1

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:	440-6927-1
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 019 Composite	440-7074-1	G2D030429-001, S204013-01	Water	3/30/2012 10:00:00 AM	1613B, 180.1, 200.7 total and dissolved, 245.1 total and dissolved, 314.0, 900, 901.1, 903.1, 904, 905, 906, ASTM D5174

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at TestAmerica-Irvine within the temperature limits of 4°C ±2°C, and below the limits at TestAmerica-West Sacramento; however, the sample containers were not noted to be frozen or damaged. The temperature upon receipt was not noted by Eberline; however, due to the nonvolatile nature of the analytes, no qualifications were required. 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 necessary. Custody seals were not present on the coolers upon arrival at TestAmerica-West Sacramento. Custody seals were not present on the coolers upon arrival at 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: April 19, 2012

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. The case narrative for this SDG noted that due to a computer error, an end static mass resolution check was not generated within the 12-hour window. As the sample was analyzed following an acceptable resolution check, and the resolution check analyzed following discovery of the computer error was acceptable, the sample data was not considered to be adversely impacted, and no qualifications were assigned.

- Calibration: Calibration criteria were met.

    - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs $\leq$20% for the 15 native compounds (calibration by isotope dilution) and $\leq$35% for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.

    - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.

- Blanks: The method blank had detects above the EDL for 2,3,7,8-TCDF, total TCDF, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 1,2,3,4,6,7,8-HpCDF, total HxCDF, and OCDF, and detects reported below the EDL for 1,2,3,7,8,9-HxCDF and total HpCDF. 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. Results for 2,3,7,8-TCDF and OCDD were qualified as nondetected, "U," at the level of contamination. The result for total TCDF was qualified as estimated, "J," as only a portion of the total was considered method blank contamination. The remaining method blank contaminants were not detected in the sample.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: This SDG had no identified field duplicate samples.

- 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. The laboratory performed a confirmation analysis for 2,3,7,8-TCDF. Though subsequently qualified as nondetected for method blank contamination (see Blanks section), the original result was confirmed at a comparable concentration, and both results were reported by the laboratory. The confirmation result was rejected, "R," in favor of the original result.

- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Any detects 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.

  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. Total PeCDF and total TCDF were qualified as estimated, "J," as the totals included an EMPC peak. As total HpCDD

consisted only of a single EMPC peak, the result was qualified as an estimated nondetect, "UJ," at the level of the EMPC.

B. EPA METHODS 200.7 and 245.1—Metals and Mercury

Reviewed By: P. Meeks
Date Reviewed: April 18, 2012

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 Methods 200.7, 200.8, 245.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: Analytical holding times, six months for ICP metals and 28 days for mercury, were met.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were $\geq$0.995 and all initial and continuing calibration recoveries were within 90-110% for the ICP metals and 85-115% for mercury. CRDL/CRI recoveries were within the control limits of 70-130%.

- Blanks: Method blanks and CCBs had no detects.

- Interference Check Samples: Recoveries were within 80-120%. Zinc was not detected in the ICSA solution.

- 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: MSD/MSD analyses were performed on total zinc and total and dissolved mercury. Recoveries and RPDs were within laboratory-established QC limits.

- Serial Dilution: No serial dilution analyses were performed.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

Total zinc was not detected and dissolved zinc was detected nominally above the MDL; however, review of the raw data indicated total zinc was present nominally below the MDL. These results were deemed to be in agreement.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks
Date Reviewed: April 18, 2012

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

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

- Calibration: Calibration criteria were met. The initial calibration r^2 value was ≥0.995 and all initial and continuing calibration recoveries were within 90-110%. IPC recovery was within the method-established control limits of 80-120% and the ICCS recovery was within method-established control limits of 75-125%.

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

- Blank Spikes and Laboratory Control Samples: Recoveries were within the method-established QC limits of 85-115%.

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

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG. Recoveries and RPDs were within method-established QC limits of 80-120% and ≤15%, respectively.

- 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. Reported nondetects are valid to the reporting limit.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

D. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks
Date Reviewed: April 27, 2012

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 the five-day holding time.

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

  The gross alpha detector efficiency was <20%; therefore, nondetected gross alpha in the sample was qualified as estimated, "UJ." The remaining detector efficiencies were greater than 20%. The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: There were no analytes detected in the method blanks or the KPA CCBs.

- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established control limits.

- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG for all analytes. 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.

E. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks
Date Reviewed: April 17, 2012

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 7196A and 9045*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, 48 hours for turbidity, was met.

- Calibration: The turbidity ICV was recovered at 60%; therefore, turbidity detected in the sample was qualified as estimated, "J." The turbidity CCVs recovered within 90-110%.

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

- Blank Spikes and Laboratory Control Samples: The recovery was within laboratory-established QC limits.

- Laboratory Duplicates: A laboratory duplicate analysis was performed on the sample in this SDG. The results, which were less than the reporting limit, were within ±RL.

- Matrix Spike/Matrix Spike Duplicate: Not applicable to these analyses.

- 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 440-6927-1

Analysis Method 1613B

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 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	0.000050	0.0000010	ug/L		U	
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000050	0.0000008	ug/L		U	
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000050	0.0000014	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000050	0.0000011	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000050	0.0000004	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000050	0.0000010	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000050	0.0000004	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000050	0.0000009	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000050	0.0000006	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000050	0.0000018	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000050	0.0000015	ug/L	J Q	UJ	*III
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.000050	0.0000004	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000050	0.0000019	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.000010	0.0000008	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.000013	0.0000008	ug/L	B	U	B
2,3,7,8-TCDF	51207-31-9	0.000011	0.000010	0.0000020	ug/L	B	R	D
OCDD	3268-87-9	ND	0.00010	0.0000019	ug/L	J Q B	U	B
OCDF	39001-02-0	ND	0.00010	0.0000021	ug/L		U	
Total HpCDD	37871-00-4	ND	0.000050	0.0000010	ug/L	J Q	UJ	*III
Total HpCDF	38998-75-3	ND	0.000050	0.0000008	ug/L		U	
Total HxCDD	34465-46-8	ND	0.000050	0.0000009	ug/L		U	
Total HxCDF	55684-94-1	ND	0.000050	0.0000004	ug/L		U	
Total PeCDD	36088-22-9	ND	0.000050	0.0000018	ug/L		U	
Total PeCDF	30402-15-4	0.000004	0.000050	0.0000017	ug/L	J Q	J	DNQ, *III
Total TCDD	41903-57-5	ND	0.000010	0.0000008	ug/L		U	
Total TCDF	55722-27-5	0.000034	0.000010	0.0000008	ug/L	J Q B	J	B, DNQ, *III

Analysis Method 180.1

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Turbidity	STL00189	0.050	0.10	0.040	NTU	J,DX	J	C, DNQ

Analysis Method 200.7 Rev 4.4

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Zinc	7440-66-6	ND	20	6.0	ug/L		U	
Zinc, Dissolved	7440-66-6	6.4	20	6.0	ug/L	J,DX	J	DNQ

Analysis Method 245.1

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.00020	0.00010	mg/L		U	
Mercury, Dissolved	7439-97-6	ND	0.00020	0.00010	mg/L		U	

Analysis Method 314.0

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 AM

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 Gamma Spec K-40 CS-137

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	-0.861	20	2.99	pCi/L	U	U	
Potassium-40	13966002	-11.7	25	37.4	pCi/L	U	U	

Analysis Method Gross Alpha and Beta

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	-0.609	3	1.2	pCi/L	U	UJ	C
Gross Beta	12587472	3.23	4	1.58	pCi/L	J	J	DNQ

Analysis Method Radium 226

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.205	1	0.656	pCi/L	U	U	

Analysis Method Radium 228

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.034	1	0.433	pCi/L	U	U	

Analysis Method Strontium 90

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	0.357	2	0.837	pCi/L	U	U	

Analysis Method Tritium

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-10.5	500	173	pCi/L	U	U	

Analysis Method Uranium, Combined

Sample Name Outfall 019 Composite **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-7074-1 **Sample Date:** 3/30/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total		0.034	1	0.021	pCi/L	J	J	DNQ

APPENDIX G

Section 11

Outfall 019 – March 29 & 30, 2012

Test America Analytical Laboratory Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-6927-1
Client Project/Site: Boeing SSFL outfalls
Sampling Event: Quarterly Outfall 019

For:
MWH Americas Inc
618 Michillinda Avenue, Suite 200
Arcadia, California 91007

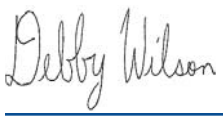
Attn: Bronwyn Kelly

Debby Wilson

Authorized for release by:
4/27/2012 12:11:50 PM

Debby Wilson
Project Manager I
debby.wilson@testamericainc.com

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



Debby Wilson
Project Manager I
4/27/2012 12:11:50 PM

Table of Contents

Sample Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-6927-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-6927-1	Outfall 019 Grab	Water	03/29/12 09:30	03/29/12 11:40
440-6927-2	Trip Blank	Water	03/29/12 09:30	03/29/12 11:40
440-7074-1	Outfall 019 Composite	Water	03/30/12 10:00	03/30/12 15:40
440-7074-3	Outfall 019 Composite - TB Eberline	Water	03/30/12 10:00	03/30/12 15:40

Job ID: 440-6927-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-6927-1

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 625: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 16977. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other analytical or quality issues were noted.

HPLC
Method(s) 300.0: Results exceeded the linear range for chloride and sulfate in the MS/MSD for batch 16544 and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).

Method(s) 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for sulfate for batch 16544 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 16543 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

GC Semi VOA
Method(s) 608: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 17166. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other analytical or quality issues were noted.

Metals
Method(s) 200.7 Rev 4.4: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 440-16921. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 200.8: No MS/MSD due to insufficient sample volume in batch 17187. See LCS/LCSD.

Method(s) 200.8: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 440-16924 The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other analytical or quality issues were noted.

General Chemistry
Method(s) 1664A: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 16566. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

No other analytical or quality issues were noted.

.**WATER, 1613B, Dioxins/Furans with Totals**

Job ID: 440-6927-1 (Continued)

Laboratory: TestAmerica Irvine (Continued)

Sample: 1
Due to a computer error on instrument 4D5, the end static mass resolution check scheduled for April 6, 2012 at 00:23 was not generated. An end static mass resolution check was generated at the next opportunity which was April 6, 2012 at 08:43 and the resolution was acceptable. However, this was longer than 12 hours after the previous static resolution check. Samples were analyzed within 12 hours of a standard and opening static mass resolution check. There is no adverse impact on the data.

Some analytes in this sample and the associated method blank (MB) 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 in the MB 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.

Organic Prep
No analytical or quality issues were noted.

Client Sample ID: Outfall 019 Grab

Lab Sample ID: 440-6927-1

Date Collected: 03/29/12 09:30

Matrix: Water

Date Received: 03/29/12 11:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			03/30/12 05:25	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			03/30/12 05:25	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			03/30/12 05:25	1
Trichlorotrifluoroethane(F-113)	ND		5.0	0.50	ug/L			03/30/12 05:25	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			03/30/12 05:25	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			03/30/12 05:25	1
Benzene	ND		0.50	0.28	ug/L			03/30/12 05:25	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/30/12 05:25	1
Chloroform	ND		0.50	0.33	ug/L			03/30/12 05:25	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/30/12 05:25	1
Tetrachloroethene	ND		0.50	0.32	ug/L			03/30/12 05:25	1
Toluene	ND		0.50	0.36	ug/L			03/30/12 05:25	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			03/30/12 05:25	1
Trichloroethene	ND		0.50	0.26	ug/L			03/30/12 05:25	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			03/30/12 05:25	1
Xylenes, Total	ND		1.5	0.90	ug/L			03/30/12 05:25	1
Vinyl chloride	ND		0.50	0.40	ug/L			03/30/12 05:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*03/30/12 05:25*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*03/30/12 05:25*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*03/30/12 05:25*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.7	1.3	mg/L		03/30/12 06:41	03/30/12 10:10	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Settleable Solids	ND		0.10	0.10	mL/L/Hr			03/29/12 20:12	1

Client Sample ID: Trip Blank

Lab Sample ID: 440-6927-2

Date Collected: 03/29/12 09:30

Matrix: Water

Date Received: 03/29/12 11:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			03/30/12 05:54	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			03/30/12 05:54	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			03/30/12 05:54	1
Trichlorotrifluoroethane(F-113)	ND		5.0	0.50	ug/L			03/30/12 05:54	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			03/30/12 05:54	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			03/30/12 05:54	1
Benzene	ND		0.50	0.28	ug/L			03/30/12 05:54	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/30/12 05:54	1
Chloroform	ND		0.50	0.33	ug/L			03/30/12 05:54	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/30/12 05:54	1
Tetrachloroethene	ND		0.50	0.32	ug/L			03/30/12 05:54	1
Toluene	ND		0.50	0.36	ug/L			03/30/12 05:54	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			03/30/12 05:54	1
Trichloroethene	ND		0.50	0.26	ug/L			03/30/12 05:54	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			03/30/12 05:54	1
Xylenes, Total	ND		1.5	0.90	ug/L			03/30/12 05:54	1

Client Sample ID: Trip Blank

Lab Sample ID: 440-6927-2

Date Collected: 03/29/12 09:30

Matrix: Water

Date Received: 03/29/12 11:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.50	0.40	ug/L			03/30/12 05:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*03/30/12 05:54*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*03/30/12 05:54*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*03/30/12 05:54*	*1*

Client Sample ID: Outfall 019 Composite

Lab Sample ID: 440-7074-1

Date Collected: 03/30/12 10:00

Matrix: Water

Date Received: 03/30/12 15:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		11.4	0.0952	ug/L		04/02/12 18:45	04/10/12 10:53	1
Bis(2-ethylhexyl) phthalate	ND		9.52	1.62	ug/L		04/02/12 18:45	04/10/12 10:53	1
N-Nitrosodimethylamine	ND		9.52	0.0952	ug/L		04/02/12 18:45	04/10/12 10:53	1
Pentachlorophenol	ND		9.52	0.381	ug/L		04/02/12 18:45	04/10/12 10:53	1
2,4-Dinitrotoluene	ND		9.52	0.190	ug/L		04/02/12 18:45	04/10/12 10:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*96*		*40 - 120*	*04/02/12 18:45*	*04/10/12 10:53*	*1*
2-Fluorobiphenyl	*80*		*50 - 120*	*04/02/12 18:45*	*04/10/12 10:53*	*1*
2-Fluorophenol	*70*		*30 - 120*	*04/02/12 18:45*	*04/10/12 10:53*	*1*
Nitrobenzene-d5	*68*		*45 - 120*	*04/02/12 18:45*	*04/10/12 10:53*	*1*
Phenol-d6	*71*		*35 - 120*	*04/02/12 18:45*	*04/10/12 10:53*	*1*
Terphenyl-d14	*106*		*50 - 125*	*04/02/12 18:45*	*04/10/12 10:53*	*1*

Method: 608 - Organochlorine Pesticides in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0048	0.0024	ug/L		04/01/12 12:44	04/04/12 02:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*73*		*35 - 115*	*04/01/12 12:44*	*04/04/12 02:17*	*1*
DCB Decachlorobiphenyl (Surr)	*90*		*45 - 120*	*04/01/12 12:44*	*04/04/12 02:17*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**37**		25	20	mg/L			03/30/12 23:55	50
Nitrate as N	ND		0.11	0.080	mg/L			03/30/12 23:38	1
Nitrate Nitrite as N	ND		0.26	0.19	mg/L			03/30/12 23:38	1
Sulfate	**190**		25	20	mg/L			03/30/12 23:55	50
Nitrite as N	ND		0.15	0.11	mg/L			03/30/12 23:38	1

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			04/03/12 16:06	1

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000088	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
Total TCDD	ND		0.000010	0.00000088	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
1,2,3,7,8-PeCDD	ND		0.000050	0.0000018	ug/L		04/04/12 09:00	04/06/12 16:12	0.97

Client Sample ID: Outfall 019 Composite
Date Collected: 03/30/12 10:00
Date Received: 03/30/12 15:40

Lab Sample ID: 440-7074-1
Matrix: Water

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total PeCDD	ND		0.000050	0.0000018	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000011	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
1,2,3,6,7,8-HxCDD	ND		0.000050	0.0000010	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000096	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
Total HxCDD	ND		0.000050	0.00000096	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
1,2,3,4,6,7,8-HpCDD	ND		0.000050	0.0000010	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
Total HpCDD	**0.0000011**	**J Q**	0.000050	0.0000010	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
OCDD	**0.0000037**	**J Q B**	0.00010	0.0000019	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
2,3,7,8-TCDF	**0.000013**	**B**	0.000010	0.00000088	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
2,3,7,8-TCDF	**0.000011**	**B**	0.000010	0.0000020	ug/L		04/04/12 09:00	04/07/12 14:31	0.97
Total TCDF	**0.000034**	**J Q B**	0.000010	0.00000088	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
1,2,3,7,8-PeCDF	**0.0000015**	**J Q**	0.000050	0.0000015	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
2,3,4,7,8-PeCDF	ND		0.000050	0.0000019	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
Total PeCDF	**0.0000041**	**J Q**	0.000050	0.0000017	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000047	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000044	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000045	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
1,2,3,7,8,9-HxCDF	ND		0.000050	0.00000066	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
Total HxCDF	ND		0.000050	0.00000044	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
1,2,3,4,6,7,8-HpCDF	ND		0.000050	0.00000081	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.0000014	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
Total HpCDF	ND		0.000050	0.00000081	ug/L		04/04/12 09:00	04/06/12 16:12	0.97
OCDF	ND		0.00010	0.0000021	ug/L		04/04/12 09:00	04/06/12 16:12	0.97

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*85*		*35 - 197*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*04/04/12 09:00*	*04/07/12 14:31*	*0.97*

Internal Standard	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*25 - 164*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-1,2,3,7,8-PeCDD	*75*		*25 - 181*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-1,2,3,4,7,8-HxCDD	*64*		*32 - 141*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-1,2,3,6,7,8-HxCDD	*86*		*28 - 130*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-1,2,3,4,6,7,8-HpCDD	*76*		*23 - 140*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-OCDD	*72*		*17 - 157*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-2,3,7,8-TCDF	*74*		*24 - 169*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-2,3,7,8-TCDF	*87*		*24 - 169*	*04/04/12 09:00*	*04/07/12 14:31*	*0.97*
13C-1,2,3,7,8-PeCDF	*75*		*24 - 185*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-2,3,4,7,8-PeCDF	*75*		*21 - 178*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-1,2,3,6,7,8-HxCDF	*90*		*26 - 123*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-2,3,4,6,7,8-HxCDF	*85*		*28 - 136*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-1,2,3,7,8,9-HxCDF	*79*		*29 - 147*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-1,2,3,4,6,7,8-HpCDF	*72*		*28 - 143*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-1,2,3,4,7,8,9-HpCDF	*76*		*26 - 138*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*
13C-1,2,3,4,7,8-HxCDF	*74*		*26 - 152*	*04/04/12 09:00*	*04/06/12 16:12*	*0.97*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		04/02/12 14:39	04/02/12 18:22	1

Client: MWH Americas Inc
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-6927-1

Client Sample ID: Outfall 019 Composite
Date Collected: 03/30/12 10:00
Date Received: 03/30/12 15:40

Lab Sample ID: 440-7074-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	**6.4**	**J,DX**	20	6.0	ug/L		04/02/12 14:40	04/02/12 18:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		04/02/12 14:40	04/03/12 12:47	1
Copper	**2.1**		2.0	0.50	ug/L		04/02/12 14:40	04/03/12 12:47	1
Lead	ND		1.0	0.20	ug/L		04/02/12 14:40	04/03/12 16:35	1
Selenium	**0.72**	**J,DX**	2.0	0.50	ug/L		04/02/12 14:40	04/03/12 16:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		04/02/12 14:41	04/03/12 13:22	1
Copper	**0.78**	**J,DX**	2.0	0.50	ug/L		04/02/12 14:41	04/03/12 13:22	1
Lead	ND		1.0	0.20	ug/L		04/02/12 14:41	04/03/12 17:11	1
Selenium	**0.88**	**J,DX**	2.0	0.50	ug/L		04/02/12 14:41	04/03/12 17:11	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/02/12 13:37	04/02/12 16:20	1

Method: 245.1 - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/02/12 13:38	04/02/12 16:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	**0.050**	**J,DX**	0.10	0.040	NTU			03/31/12 07:55	1
Total Dissolved Solids	**410**		10	10	mg/L			04/02/12 10:26	1
Total Suspended Solids	ND		10	10	mg/L			04/02/12 19:36	1
Cyanide, Total	ND		5.0	3.0	ug/L		04/02/12 14:41	04/02/12 17:15	1
Ammonia (as N)	**0.280**	**J,DX**	0.400	0.157	mg/L		04/03/12 16:20	04/03/12 22:04	1
Total Organic Carbon	ND		1.0	0.75	mg/L			04/02/12 06:29	1
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			03/30/12 22:25	1
Biochemical Oxygen Demand	ND		2.0	0.50	mg/L			03/31/12 16:00	1

Method: Gamma Spec K-40 CS-137 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	-0.861	U	20		pCi/L		04/05/12 00:00	04/05/12 00:00	1
Potassium-40	-11.7	U	25		pCi/L		04/05/12 00:00	04/05/12 00:00	1

Method: Gross Alpha and Beta - Gross Alpha/Beta

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.609	U	3		pCi/L		04/12/12 00:00	04/17/12 08:23	1
Gross Beta	3.23	J	4		pCi/L		04/12/12 00:00	04/17/12 08:23	1

Method: Radium 226 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	0.205	U	1		pCi/L		04/11/12 00:00	04/11/12 13:39	1

Method: Radium 228 - RAD-226-228 combined

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	0.034	U	1		pCi/L		04/18/12 00:00	04/18/12 14:11	1

Client Sample ID: Outfall 019 Composite

Lab Sample ID: 440-7074-1

Date Collected: 03/30/12 10:00

Matrix: Water

Date Received: 03/30/12 15:40

Method: Strontium 90 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	0.357	U	2		pCi/L		04/12/12 00:00	04/12/12 07:08	1

Method: Tritium - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	-10.5	U	500		pCi/L		04/13/12 00:00	04/14/12 03:26	1

Method: Uranium, Combined - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0.034	J	1		pCi/L		04/17/12 00:00	04/17/12 10:48	1

Client Sample ID: Outfall 019 Composite - TB Eberline

Lab Sample ID: 440-7074-3

Date Collected: 03/30/12 10:00

Matrix: Water

Date Received: 03/30/12 15:40

Method: Gamma Spec K-40 CS-137 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	0.298	U	20		pCi/L		04/05/12 00:00	04/05/12 00:00	1
Potassium-40	8.16	U	25		pCi/L		04/05/12 00:00	04/05/12 00:00	1

Method: Gross Alpha and Beta - Gross Alpha/Beta

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	0.089	U	3		pCi/L		04/12/12 00:00	04/17/12 08:23	1
Gross Beta	-0.325	U	4		pCi/L		04/12/12 00:00	04/17/12 08:23	1

Method: Radium 226 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	-0.011	U	1		pCi/L		04/11/12 00:00	04/11/12 13:39	1

Method: Radium 228 - RAD-226-228 combined

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	-0.03	U	1		pCi/L		04/18/12 00:00	04/18/12 14:11	1

Method: Strontium 90 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	0.188	U	2		pCi/L		04/12/12 00:00	04/12/12 07:08	1

Method: Uranium, Combined - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0	U	1		pCi/L		04/17/12 00:00	04/17/12 11:03	1

Client Sample ID: Outfall 019 Grab

Lab Sample ID: 440-6927-1

Date Collected: 03/29/12 09:30

Matrix: Water

Date Received: 03/29/12 11:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	16434	03/30/12 05:25	RM	TAL IRV
Total/NA	Analysis	SM 2540F		1	1000 mL	1000 mL	16470	03/29/12 20:12	EC	TAL IRV
Total/NA	Prep	1664A			1055 mL	1000 mL	16524	03/30/12 06:41	DA	TAL IRV
Total/NA	Analysis	1664A		1			16566	03/30/12 10:10	DA	TAL IRV

Client Sample ID: Trip Blank

Lab Sample ID: 440-6927-2

Date Collected: 03/29/12 09:30

Matrix: Water

Date Received: 03/29/12 11:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	16434	03/30/12 05:54	RM	TAL IRV

Client Sample ID: Outfall 019 Composite

Lab Sample ID: 440-7074-1

Date Collected: 03/30/12 10:00

Matrix: Water

Date Received: 03/30/12 15:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1050 mL	2 mL	16977	04/02/12 18:45	DM	TAL IRV
Total/NA	Analysis	625		1			18525	04/10/12 10:53	AI	TAL IRV
Total/NA	Prep	608			1050 mL	2 mL	16796	04/01/12 12:44	AB	TAL IRV
Total/NA	Analysis	608		1			17166	04/04/12 02:17	DD	TAL IRV
Total/NA	Analysis	300.0		1	1 mL	1.0 mL	16543	03/30/12 23:38	NN	TAL IRV
Total/NA	Analysis	300.0		50	1 mL	1.0 mL	16544	03/30/12 23:55	NN	TAL IRV
Total/NA	Analysis	314.0		1	5 mL	1.0 mL	17114	04/03/12 16:06	MN	TAL IRV
Total	Prep	3542			1032.56 mL	20 uL	2095076_P	04/04/12 09:00	TL	TAL WSC
Total	Analysis	1613B		0.97			2095076	04/06/12 16:12	LLH	TAL WSC
Total	Analysis	1613B		0.97			2095076	04/07/12 14:31	LLH	TAL WSC
Total/NA	Prep	245.1			20 mL	20 mL	16911	04/02/12 13:37	DB	TAL IRV
Total/NA	Analysis	245.1		1			16968	04/02/12 16:20	DB	TAL IRV
Dissolved	Prep	245.1			20 mL	20 mL	16913	04/02/12 13:38	DB	TAL IRV
Dissolved	Analysis	245.1		1			16968	04/02/12 16:41	DB	TAL IRV
Total Recoverable	Prep	200.2			50 mL	50 mL	16920	04/02/12 14:39	CH	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			16986	04/02/12 18:22	TK	TAL IRV
Dissolved	Prep	200.2			50 mL	50 mL	16921	04/02/12 14:40	SC	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1			16986	04/02/12 18:37	TK	TAL IRV
Total Recoverable	Prep	200.2			50 mL	50 mL	16922	04/02/12 14:40	CH	TAL IRV
Total Recoverable	Analysis	200.8		1			17187	04/03/12 12:47	RC	TAL IRV
Dissolved	Prep	200.2			50 mL	50 mL	16924	04/02/12 14:41	SC	TAL IRV
Dissolved	Analysis	200.8		1			17187	04/03/12 13:22	RC	TAL IRV
Total Recoverable	Analysis	200.8		1			17342	04/03/12 16:35	RC	TAL IRV
Dissolved	Analysis	200.8		1			17342	04/03/12 17:11	RC	TAL IRV
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	16715	03/30/12 22:25	SL	TAL IRV
Total/NA	Analysis	180.1		1			16721	03/31/12 07:55	EC	TAL IRV

Client Sample ID: Outfall 019 Composite

Lab Sample ID: 440-7074-1

Date Collected: 03/30/12 10:00

Matrix: Water

Date Received: 03/30/12 15:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM5210B		1			16743	03/31/12 16:00	RS	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	16856	04/02/12 10:26	XL	TAL IRV
Total/NA	Analysis	SM 5310B		1	1.0 mL	1.0 mL	16887	04/02/12 06:29	FZ	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	16923	04/02/12 14:41	PQI	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1			16966	04/02/12 17:15	PQI	TAL IRV
Total/NA	Analysis	SM 2540D		1	100 mL	100 mL	16993	04/02/12 19:36	DK	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	17213	04/03/12 16:20	NP	TAL IRV
Total/NA	Analysis	SM 4500 NH3 C		1			17289	04/03/12 22:04	NP	TAL IRV
Total/NA	Analysis	Gamma Spec K-40 CS-137		1			8604	04/05/12 00:00	LS	Eber-Rich
Total/NA	Prep	General Prep		1			8604_P	04/05/12 00:00		Eber-Rich
Total/NA	Prep	General Prep		1			8604_P	04/12/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8604	04/17/12 08:23	DVP	Eber-Rich
Total/NA	Prep	General Prep		1			8604_P	04/11/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 226		1			8604	04/11/12 13:39	TM	Eber-Rich
Total/NA	Prep	General Prep		1			8604_P	04/18/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 228		1			8604	04/18/12 14:11	ASM	Eber-Rich
Total/NA	Analysis	Strontium 90		1			8604	04/12/12 07:08	ASM	Eber-Rich
Total/NA	Prep	General Prep		1			8604_P	04/13/12 00:00		Eber-Rich
Total/NA	Analysis	Tritium		1			8604	04/14/12 03:26	WL	Eber-Rich
Total/NA	Prep	General Prep		1			8604_P	04/17/12 00:00		Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8604	04/17/12 10:48	LS	Eber-Rich

Client Sample ID: Outfall 019 Composite - TB Eberline

Lab Sample ID: 440-7074-3

Date Collected: 03/30/12 10:00

Matrix: Water

Date Received: 03/30/12 15:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Gamma Spec K-40 CS-137		1			8604	04/05/12 00:00	LS	Eber-Rich
Total/NA	Prep	General Prep		1			8604_P	04/05/12 00:00		Eber-Rich
Total/NA	Prep	General Prep		1			8604_P	04/12/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8604	04/17/12 08:23	DVP	Eber-Rich
Total/NA	Prep	General Prep		1			8604_P	04/11/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 226		1			8604	04/11/12 13:39	TM	Eber-Rich
Total/NA	Prep	General Prep		1			8604_P	04/18/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 228		1			8604	04/18/12 14:11	ASM	Eber-Rich
Total/NA	Analysis	Strontium 90		1			8604	04/12/12 07:08	ASM	Eber-Rich
Total/NA	Prep	General Prep		1			8604_P	04/17/12 00:00		Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8604	04/17/12 11:03	LS	Eber-Rich

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-6927-1

Laboratory References:

Eber-Rich = Eberline - Richmond, 2030 Wright Avenue, Richmond, CA 94804

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

TAL WSC = TestAmerica West Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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

Lab Sample ID: MB 440-16434/4
Matrix: Water
Analysis Batch: 16434

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			03/29/12 21:21	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			03/29/12 21:21	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			03/29/12 21:21	1
Trichlorotrifluoroethane(F-113)	ND		5.0	0.50	ug/L			03/29/12 21:21	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			03/29/12 21:21	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			03/29/12 21:21	1
Benzene	ND		0.50	0.28	ug/L			03/29/12 21:21	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/29/12 21:21	1
Chloroform	ND		0.50	0.33	ug/L			03/29/12 21:21	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/29/12 21:21	1
Tetrachloroethene	ND		0.50	0.32	ug/L			03/29/12 21:21	1
Toluene	ND		0.50	0.36	ug/L			03/29/12 21:21	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			03/29/12 21:21	1
Trichloroethene	ND		0.50	0.26	ug/L			03/29/12 21:21	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			03/29/12 21:21	1
Xylenes, Total	ND		1.5	0.90	ug/L			03/29/12 21:21	1
Vinyl chloride	ND		0.50	0.40	ug/L			03/29/12 21:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*03/29/12 21:21*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*03/29/12 21:21*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*03/29/12 21:21*	*1*

Lab Sample ID: LCS 440-16434/5
Matrix: Water
Analysis Batch: 16434

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	25.7		ug/L		103	65 - 135
1,1,2-Trichloroethane	25.0	22.9		ug/L		92	70 - 125
1,1-Dichloroethane	25.0	24.3		ug/L		97	70 - 125
1,1-Dichloroethene	25.0	22.6		ug/L		90	70 - 125
1,2-Dichloroethane	25.0	26.3		ug/L		105	60 - 140
Benzene	25.0	24.6		ug/L		98	70 - 120
Carbon tetrachloride	25.0	26.1		ug/L		104	65 - 140
Chloroform	25.0	24.0		ug/L		96	70 - 130
Ethylbenzene	25.0	24.4		ug/L		98	75 - 125
Tetrachloroethene	25.0	24.8		ug/L		99	70 - 125
Toluene	25.0	24.4		ug/L		98	70 - 120
Trichlorofluoromethane	25.0	27.1		ug/L		108	65 - 145
Trichloroethene	25.0	25.0		ug/L		100	70 - 125
cis-1,2-Dichloroethene	25.0	25.3		ug/L		101	70 - 125
m,p-Xylene	50.0	51.5		ug/L		103	75 - 125
o-Xylene	25.0	26.3		ug/L		105	75 - 125
Xylenes, Total	75.0	77.8		ug/L		104	70 - 125
Vinyl chloride	25.0	21.5		ug/L		86	55 - 135

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

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

Lab Sample ID: LCS 440-16434/5
Matrix: Water
Analysis Batch: 16434

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	97		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: 440-5955-N-2 MS
Matrix: Water
Analysis Batch: 16434

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		2500	2620		ug/L		105	65 - 140
1,1,2-Trichloroethane	ND		2500	2320		ug/L		93	65 - 130
1,1-Dichloroethane	ND		2500	2420		ug/L		97	65 - 130
1,1-Dichloroethene	180		2500	2480		ug/L		92	60 - 130
1,2-Dichloroethane	ND		2500	2590		ug/L		104	60 - 140
Benzene	ND		2500	2300		ug/L		92	65 - 125
Carbon tetrachloride	ND		2500	2510		ug/L		100	65 - 140
Chloroform	ND		2500	2510		ug/L		100	65 - 135
Ethylbenzene	ND		2500	2410		ug/L		96	65 - 130
Tetrachloroethene	ND		2500	2380		ug/L		95	65 - 130
Toluene	ND		2500	2400		ug/L		96	70 - 125
Trichlorofluoromethane	ND		2500	2750		ug/L		110	60 - 145
Trichloroethene	450		2500	2860		ug/L		96	65 - 125
cis-1,2-Dichloroethene	ND		2500	2640		ug/L		106	65 - 130
m,p-Xylene	ND		5000	4980		ug/L		100	65 - 130
o-Xylene	ND		2500	2610		ug/L		104	65 - 125
Xylenes, Total	ND		7500	7590		ug/L		101	60 - 130
Vinyl chloride	ND		2500	2200		ug/L		88	45 - 140

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		80 - 120
Dibromofluoromethane (Surr)	99		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: 440-5955-N-2 MSD
Matrix: Water
Analysis Batch: 16434

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		2500	2630		ug/L		105	65 - 140	0	20
1,1,2-Trichloroethane	ND		2500	2270		ug/L		91	65 - 130	2	25
1,1-Dichloroethane	ND		2500	2530		ug/L		101	65 - 130	4	20
1,1-Dichloroethene	180		2500	2770		ug/L		103	60 - 130	11	20
1,2-Dichloroethane	ND		2500	2640		ug/L		106	60 - 140	2	20
Benzene	ND		2500	2420		ug/L		97	65 - 125	5	20
Carbon tetrachloride	ND		2500	2550		ug/L		102	65 - 140	2	25
Chloroform	ND		2500	2530		ug/L		101	65 - 135	1	20
Ethylbenzene	ND		2500	2550		ug/L		102	65 - 130	6	20
Tetrachloroethene	ND		2500	2520		ug/L		101	65 - 130	6	20
Toluene	ND		2500	2420		ug/L		97	70 - 125	1	20
Trichlorofluoromethane	ND		2500	2820		ug/L		113	60 - 145	3	25

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

Lab Sample ID: 440-5955-N-2 MSD
Matrix: Water
Analysis Batch: 16434

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichloroethene	450		2500	2920		ug/L		99	65 - 125	2	20
cis-1,2-Dichloroethene	ND		2500	2850		ug/L		114	65 - 130	8	20
m,p-Xylene	ND		5000	5340		ug/L		107	65 - 130	7	25
o-Xylene	ND		2500	2740		ug/L		110	65 - 125	5	20
Xylenes, Total	ND		7500	8080		ug/L		108	60 - 130	6	20
Vinyl chloride	ND		2500	2310		ug/L		92	45 - 140	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

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

Lab Sample ID: MB 440-16977/1-A
Matrix: Water
Analysis Batch: 18525

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 16977

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		12.0	0.100	ug/L		04/02/12 18:45	04/09/12 20:50	1
Bis(2-ethylhexyl) phthalate	ND		10.0	1.70	ug/L		04/02/12 18:45	04/09/12 20:50	1
N-Nitrosodimethylamine	ND		10.0	0.100	ug/L		04/02/12 18:45	04/09/12 20:50	1
Pentachlorophenol	ND		10.0	0.400	ug/L		04/02/12 18:45	04/09/12 20:50	1
2,4-Dinitrotoluene	ND		10.0	0.200	ug/L		04/02/12 18:45	04/09/12 20:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*89*		*40 - 120*	*04/02/12 18:45*	*04/09/12 20:50*	*1*
2-Fluorobiphenyl	*89*		*50 - 120*	*04/02/12 18:45*	*04/09/12 20:50*	*1*
2-Fluorophenol	*76*		*30 - 120*	*04/02/12 18:45*	*04/09/12 20:50*	*1*
Nitrobenzene-d5	*79*		*45 - 120*	*04/02/12 18:45*	*04/09/12 20:50*	*1*
Phenol-d6	*81*		*35 - 120*	*04/02/12 18:45*	*04/09/12 20:50*	*1*
Terphenyl-d14	*95*		*50 - 125*	*04/02/12 18:45*	*04/09/12 20:50*	*1*

Lab Sample ID: LCS 440-16977/2-A
Matrix: Water
Analysis Batch: 18525

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 16977

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,6-Trichlorophenol	10.0	7.840	J,DX	ug/L		78	55 - 120
Bis(2-ethylhexyl) phthalate	10.0	8.800	J,DX	ug/L		88	65 - 130
N-Nitrosodimethylamine	10.0	7.740	J,DX	ug/L		77	45 - 120
Pentachlorophenol	10.0	9.120	J,DX	ug/L		91	24 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*85*		*40 - 120*
2-Fluorobiphenyl	*85*		*50 - 120*
2-Fluorophenol	*67*		*30 - 120*
Nitrobenzene-d5	*77*		*45 - 120*

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

Lab Sample ID: LCS 440-16977/2-A
Matrix: Water
Analysis Batch: 18525

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 16977

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Phenol-d6	*77*		*35 - 120*
Terphenyl-d14	*84*		*50 - 125*

Lab Sample ID: LCSD 440-16977/3-A
Matrix: Water
Analysis Batch: 18525

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 16977

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4,6-Trichlorophenol			10.0	7.620	J,DX	ug/L		76	55 - 120	3	30
Bis(2-ethylhexyl) phthalate			10.0	10.00		ug/L		100	65 - 130	13	20
N-Nitrosodimethylamine			10.0	7.000	J,DX	ug/L		70	45 - 120	10	20
Pentachlorophenol			10.0	9.180	J,DX	ug/L		92	24 - 121	1	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol	*86*		*40 - 120*
2-Fluorobiphenyl	*83*		*50 - 120*
2-Fluorophenol	*69*		*30 - 120*
Nitrobenzene-d5	*76*		*45 - 120*
Phenol-d6	*77*		*35 - 120*
Terphenyl-d14	*93*		*50 - 125*

Method: 608 - Organochlorine Pesticides in Water

Lab Sample ID: MB 440-16796/1-A
Matrix: Water
Analysis Batch: 17166

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 16796

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0050	0.0025	ug/L		04/01/12 12:44	04/04/12 01:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*89*		*35 - 115*	*04/01/12 12:44*	*04/04/12 01:08*	*1*
DCB Decachlorobiphenyl (Surr)	*95*		*45 - 120*	*04/01/12 12:44*	*04/04/12 01:08*	*1*

Lab Sample ID: LCS 440-16796/2-A
Matrix: Water
Analysis Batch: 17166

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 16796

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
alpha-BHC			0.500	0.511		ug/L		102	45 - 115		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	*81*		*35 - 115*
DCB Decachlorobiphenyl (Surr)	*91*		*45 - 120*

Method: 608 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: LCSD 440-16796/3-A
Matrix: Water
Analysis Batch: 17166

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 16796

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
alpha-BHC			0.500	0.515		ug/L		103	45 - 115	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*84*		*35 - 115*
DCB Decachlorobiphenyl (Surr)	*90*		*45 - 120*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-16543/2
Matrix: Water
Analysis Batch: 16543

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.080	mg/L			03/30/12 09:29	1
Nitrate Nitrite as N	ND		0.26	0.19	mg/L			03/30/12 09:29	1
Nitrite as N	ND		0.15	0.11	mg/L			03/30/12 09:29	1

Lab Sample ID: LCS 440-16543/9
Matrix: Water
Analysis Batch: 16543

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N			1.13	1.12		mg/L		99	90 - 110		
Nitrate Nitrite as N			2.65	2.64		mg/L		100	90 - 110		
Nitrite as N			1.52	1.52		mg/L		100	90 - 110		

Lab Sample ID: 440-7032-A-10 MS
Matrix: Water
Analysis Batch: 16543

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N	0.17		1.13	1.29		mg/L		99	80 - 120		
Nitrate Nitrite as N	ND		2.65	1.29	LN	mg/L		49	80 - 120		
Nitrite as N	ND		1.52	ND	LN	mg/L		0	80 - 120		

Lab Sample ID: 440-7032-A-10 MSD
Matrix: Water
Analysis Batch: 16543

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.17		1.13	1.33		mg/L		102	80 - 120	3	20
Nitrate Nitrite as N	ND		2.65	1.33	AY	mg/L		50	80 - 120	3	20
Nitrite as N	ND		1.52	ND	AY	mg/L		0	80 - 120	NC	20

Lab Sample ID: MB 440-16544/2
Matrix: Water
Analysis Batch: 16544

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.40	mg/L			03/30/12 09:29	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 440-16544/2
Matrix: Water
Analysis Batch: 16544

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		0.50	0.40	mg/L			03/30/12 09:29	1

Lab Sample ID: LCS 440-16544/9
Matrix: Water
Analysis Batch: 16544

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.77		mg/L		95	90 - 110
Sulfate	10.0	10.2		mg/L		102	90 - 110

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 440-17114/5
Matrix: Water
Analysis Batch: 17114

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			04/03/12 14:42	1

Lab Sample ID: LCS 440-17114/4
Matrix: Water
Analysis Batch: 17114

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	24.5		ug/L		98	85 - 115

Lab Sample ID: 440-7074-1 MS
Matrix: Water
Analysis Batch: 17114

Client Sample ID: Outfall 019 Composite
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	ND		25.0	20.6		ug/L		82	80 - 120

Lab Sample ID: 440-7074-1 MSD
Matrix: Water
Analysis Batch: 17114

Client Sample ID: Outfall 019 Composite
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	ND		25.0	20.6		ug/L		82	80 - 120	0	20

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

Lab Sample ID: G2D040000076B
Matrix: Water
Analysis Batch: 2095076

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 2095076_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000019	ug/L		04/04/12 09:00	04/05/12 15:33	1
Total TCDD	ND		0.000010	0.0000019	ug/L		04/04/12 09:00	04/05/12 15:33	1
1,2,3,7,8-PeCDD	ND		0.000050	0.0000050	ug/L		04/04/12 09:00	04/05/12 15:33	1
Total PeCDD	ND		0.000050	0.0000050	ug/L		04/04/12 09:00	04/05/12 15:33	1

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

Lab Sample ID: G2D040000076B
Matrix: Water
Analysis Batch: 2095076

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 2095076_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000019	ug/L		04/04/12 09:00	04/05/12 15:33	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.0000019	ug/L		04/04/12 09:00	04/05/12 15:33	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.0000017	ug/L		04/04/12 09:00	04/05/12 15:33	1
Total HxCDD	ND		0.000050	0.0000017	ug/L		04/04/12 09:00	04/05/12 15:33	1
1,2,3,4,6,7,8-HpCDD	ND		0.000050	0.0000033	ug/L		04/04/12 09:00	04/05/12 15:33	1
Total HpCDD	ND		0.000050	0.0000033	ug/L		04/04/12 09:00	04/05/12 15:33	1
OCDD	0.0000068	J Q	0.00010	0.0000038	ug/L		04/04/12 09:00	04/05/12 15:33	1
2,3,7,8-TCDF	0.0000056	J Q	0.000010	0.0000016	ug/L		04/04/12 09:00	04/05/12 15:33	1
Total TCDF	0.000016	J Q	0.000010	0.0000016	ug/L		04/04/12 09:00	04/05/12 15:33	1
1,2,3,7,8-PeCDF	ND		0.000050	0.0000027	ug/L		04/04/12 09:00	04/05/12 15:33	1
2,3,4,7,8-PeCDF	ND		0.000050	0.0000033	ug/L		04/04/12 09:00	04/05/12 15:33	1
Total PeCDF	ND		0.000050	0.0000027	ug/L		04/04/12 09:00	04/05/12 15:33	1
1,2,3,4,7,8-HxCDF	0.0000016	J	0.000050	0.0000013	ug/L		04/04/12 09:00	04/05/12 15:33	1
1,2,3,6,7,8-HxCDF	0.0000013	J	0.000050	0.0000013	ug/L		04/04/12 09:00	04/05/12 15:33	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.0000014	ug/L		04/04/12 09:00	04/05/12 15:33	1
1,2,3,7,8,9-HxCDF	0.0000017	J	0.000050	0.0000019	ug/L		04/04/12 09:00	04/05/12 15:33	1
Total HxCDF	0.0000046	J	0.000050	0.0000015	ug/L		04/04/12 09:00	04/05/12 15:33	1
1,2,3,4,6,7,8-HpCDF	0.0000019	J Q	0.000050	0.0000016	ug/L		04/04/12 09:00	04/05/12 15:33	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.0000027	ug/L		04/04/12 09:00	04/05/12 15:33	1
Total HpCDF	0.0000019	J Q	0.000050	0.0000021	ug/L		04/04/12 09:00	04/05/12 15:33	1
OCDF	ND		0.00010	0.0000052	ug/L		04/04/12 09:00	04/05/12 15:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*90*		*35 - 197*	*04/04/12 09:00*	*04/05/12 15:33*	*1*

Internal Standard	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*25 - 164*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-1,2,3,7,8-PeCDD	*70*		*25 - 181*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-1,2,3,4,7,8-HxCDD	*82*		*32 - 141*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-1,2,3,6,7,8-HxCDD	*82*		*28 - 130*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*73*		*23 - 140*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-OCDD	*63*		*17 - 157*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-2,3,7,8-TCDF	*65*		*24 - 169*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-1,2,3,7,8-PeCDF	*68*		*24 - 185*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-2,3,4,7,8-PeCDF	*72*		*21 - 178*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-1,2,3,6,7,8-HxCDF	*79*		*26 - 123*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-2,3,4,6,7,8-HxCDF	*79*		*28 - 136*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-1,2,3,7,8,9-HxCDF	*74*		*29 - 147*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*72*		*28 - 143*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*71*		*26 - 138*	*04/04/12 09:00*	*04/05/12 15:33*	*1*
13C-1,2,3,4,7,8-HxCDF	*77*		*26 - 152*	*04/04/12 09:00*	*04/05/12 15:33*	*1*

Lab Sample ID: G2D040000076B
Matrix: Water
Analysis Batch: 2095076

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 2095076_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	0.0000049	J	0.000010	0.0000019	ug/L		04/04/12 09:00	04/09/12 18:19	1

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

Lab Sample ID: G2D040000076B
Matrix: Water
Analysis Batch: 2095076

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 2095076_P

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	97		35 - 197	04/04/12 09:00	04/09/12 18:19	1

Internal Standard	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	92		24 - 169	04/04/12 09:00	04/09/12 18:19	1

Lab Sample ID: G2D040000076C
Matrix: Water
Analysis Batch: 2095076

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 2095076_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	0.000200	0.000192		ug/L		96	67 - 158
1,2,3,7,8-PeCDD	0.00100	0.00117		ug/L		117	70 - 142
1,2,3,4,7,8-HxCDD	0.00100	0.00106		ug/L		106	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00104		ug/L		104	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.00108		ug/L		108	64 - 162
1,2,3,4,6,7,8-HpCDD	0.00100	0.00112		ug/L		112	70 - 140
OCDD	0.00200	0.00228	B	ug/L		114	78 - 144
2,3,7,8-TCDF	0.000200	0.000232	B	ug/L		116	75 - 158
1,2,3,7,8-PeCDF	0.00100	0.00111		ug/L		111	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.00109		ug/L		109	68 - 160
1,2,3,4,7,8-HxCDF	0.00100	0.00110	B	ug/L		110	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.00106	B	ug/L		106	84 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.00109		ug/L		109	70 - 156
1,2,3,7,8,9-HxCDF	0.00100	0.00106	B	ug/L		106	78 - 130
1,2,3,4,6,7,8-HpCDF	0.00100	0.00112	B	ug/L		112	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.00109		ug/L		109	78 - 138
OCDF	0.00200	0.00229		ug/L		115	63 - 170

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	86		31 - 191

Internal Standard	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	49		20 - 175
13C-1,2,3,7,8-PeCDD	43		21 - 227
13C-1,2,3,4,7,8-HxCDD	43		21 - 193
13C-1,2,3,6,7,8-HxCDD	50		25 - 163
13C-1,2,3,4,6,7,8-HpCDD	41		26 - 166
13C-OCDD	36		13 - 199
13C-2,3,7,8-TCDF	48		22 - 152
13C-1,2,3,7,8-PeCDF	41		21 - 192
13C-2,3,4,7,8-PeCDF	45		13 - 328
13C-1,2,3,6,7,8-HxCDF	51		21 - 159
13C-2,3,4,6,7,8-HxCDF	50		22 - 176
13C-1,2,3,7,8,9-HxCDF	46		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	42		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	40		20 - 186
13C-1,2,3,4,7,8-HxCDF	45		19 - 202

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 440-16920/1-A
Matrix: Water
Analysis Batch: 16986

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 16920

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		04/02/12 14:39	04/02/12 18:17	1

Lab Sample ID: LCS 440-16920/2-A
Matrix: Water
Analysis Batch: 16986

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 16920

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	500	513		ug/L		103	85 - 115

Lab Sample ID: 440-7074-1 MS
Matrix: Water
Analysis Batch: 16986

Client Sample ID: Outfall 019 Composite
Prep Type: Total Recoverable
Prep Batch: 16920

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	ND		500	524		ug/L		105	70 - 130

Lab Sample ID: 440-7074-1 MSD
Matrix: Water
Analysis Batch: 16986

Client Sample ID: Outfall 019 Composite
Prep Type: Total Recoverable
Prep Batch: 16920

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Zinc	ND		500	539		ug/L		108	70 - 130	3	20

Lab Sample ID: LCSD 440-16921/3-A
Matrix: Water
Analysis Batch: 16986

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 16921

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Zinc	500	511		ug/L					

Lab Sample ID: MB 440-16905/1-C
Matrix: Water
Analysis Batch: 16986

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 16921

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		04/02/12 14:40	04/02/12 18:31	1

Lab Sample ID: LCS 440-16905/2-C
Matrix: Water
Analysis Batch: 16986

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 16921

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	500	512		ug/L		102	85 - 115

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-16922/1-A
Matrix: Water
Analysis Batch: 17187

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 16922

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		04/02/12 14:40	04/03/12 12:36	1
Copper	ND		2.0	0.50	ug/L		04/02/12 14:40	04/03/12 12:36	1

Lab Sample ID: MB 440-16922/1-A
Matrix: Water
Analysis Batch: 17342

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 16922

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.0	0.20	ug/L		04/02/12 14:40	04/03/12 16:25	1
Selenium	ND		2.0	0.50	ug/L		04/02/12 14:40	04/03/12 16:25	1

Lab Sample ID: LCS 440-16922/2-A
Matrix: Water
Analysis Batch: 17187

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 16922

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	87.3		ug/L		109	85 - 115
Copper	80.0	71.5		ug/L		89	85 - 115

Lab Sample ID: LCS 440-16922/2-A
Matrix: Water
Analysis Batch: 17342

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 16922

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	80.0	77.4		ug/L		97	85 - 115
Selenium	80.0	81.9		ug/L		102	85 - 115

Lab Sample ID: 440-7074-1 MS
Matrix: Water
Analysis Batch: 17187

Client Sample ID: Outfall 019 Composite
Prep Type: Total Recoverable
Prep Batch: 16922

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND		80.0	81.1		ug/L		101	70 - 130
Copper	2.1		80.0	67.8		ug/L		82	70 - 130

Lab Sample ID: 440-7074-1 MS
Matrix: Water
Analysis Batch: 17342

Client Sample ID: Outfall 019 Composite
Prep Type: Total Recoverable
Prep Batch: 16922

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		80.0	70.4		ug/L		88	70 - 130
Selenium	0.72	J,DX	80.0	77.4		ug/L		96	70 - 130

Lab Sample ID: 440-7074-1 MSD
Matrix: Water
Analysis Batch: 17187

Client Sample ID: Outfall 019 Composite
Prep Type: Total Recoverable
Prep Batch: 16922

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	ND		80.0	82.8		ug/L		103	70 - 130	2	20
Copper	2.1		80.0	67.5		ug/L		82	70 - 130	1	20

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

Lab Sample ID: 440-7074-1 MSD
Matrix: Water
Analysis Batch: 17342

Client Sample ID: Outfall 019 Composite
Prep Type: Total Recoverable
Prep Batch: 16922

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		80.0	69.5		ug/L		87	70 - 130	1	20
Selenium	0.72	J,DX	80.0	79.5		ug/L		98	70 - 130	3	20

Lab Sample ID: MB 440-16905/1-D
Matrix: Water
Analysis Batch: 17187

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 16924

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		04/02/12 14:41	04/03/12 13:07	1
Copper	ND		2.0	0.50	ug/L		04/02/12 14:41	04/03/12 13:07	1

Lab Sample ID: MB 440-16905/1-D
Matrix: Water
Analysis Batch: 17342

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 16924

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.0	0.20	ug/L		04/02/12 14:41	04/03/12 16:56	1
Selenium	ND		2.0	0.50	ug/L		04/02/12 14:41	04/03/12 16:56	1

Lab Sample ID: LCS 440-16905/2-D
Matrix: Water
Analysis Batch: 17187

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 16924

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	84.9		ug/L		106	85 - 115
Copper	80.0	69.4		ug/L		87	85 - 115

Lab Sample ID: LCS 440-16905/2-D
Matrix: Water
Analysis Batch: 17342

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 16924

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	80.0	79.0		ug/L		99	85 - 115
Selenium	80.0	79.3		ug/L		99	85 - 115

Lab Sample ID: LCSD 440-16905/4-B
Matrix: Water
Analysis Batch: 17187

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 16924

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	80.0	85.3		ug/L		107	85 - 115	0	20
Copper	80.0	69.5		ug/L		87	85 - 115	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-16911/1-A
Matrix: Water
Analysis Batch: 16968

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 16911

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/02/12 13:37	04/02/12 16:15	1

Client: MWH Americas Inc
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-6927-1

Lab Sample ID: LCS 440-16911/2-A
Matrix: Water
Analysis Batch: 16968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 16911

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			8.00	7.75		ug/L		97	85 - 115		

Lab Sample ID: 440-7074-1 MS
Matrix: Water
Analysis Batch: 16968

Client Sample ID: Outfall 019 Composite
Prep Type: Total/NA
Prep Batch: 16911

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		8.00	7.74		ug/L		97	70 - 130		

Lab Sample ID: 440-7074-1 MSD
Matrix: Water
Analysis Batch: 16968

Client Sample ID: Outfall 019 Composite
Prep Type: Total/NA
Prep Batch: 16911

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	7.81		ug/L		98	70 - 130	1	20

Lab Sample ID: MB 440-16905/1-B
Matrix: Water
Analysis Batch: 16968

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 16913

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/02/12 13:38	04/02/12 16:36	1

Lab Sample ID: LCS 440-16905/2-B
Matrix: Water
Analysis Batch: 16968

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 16913

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			8.00	7.63		ug/L		95	85 - 115		

Lab Sample ID: 440-7074-1 MS
Matrix: Water
Analysis Batch: 16968

Client Sample ID: Outfall 019 Composite
Prep Type: Dissolved
Prep Batch: 16913

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		8.00	7.58		ug/L		95	70 - 130		

Lab Sample ID: 440-7074-1 MSD
Matrix: Water
Analysis Batch: 16968

Client Sample ID: Outfall 019 Composite
Prep Type: Dissolved
Prep Batch: 16913

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	7.76		ug/L		97	70 - 130	2	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-16524/1-A
Matrix: Water
Analysis Batch: 16566

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 16524

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	1.4	mg/L		03/30/12 06:41	03/30/12 10:10	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 440-16524/2-A
Matrix: Water
Analysis Batch: 16566

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 16524

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	20.0	20.1		mg/L		101	78 - 114

Lab Sample ID: LCSD 440-16524/3-A
Matrix: Water
Analysis Batch: 16566

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 16524

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM	20.0	18.9		mg/L		95	78 - 114	6	11

Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 440-16721/6
Matrix: Water
Analysis Batch: 16721

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		0.10	0.040	NTU			03/31/12 07:55	1

Lab Sample ID: MRL 440-16721/4 MRL
Matrix: Water
Analysis Batch: 16721

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Turbidity	1.00	1.05		NTU		105	

Lab Sample ID: 440-7074-1 DU
Matrix: Water
Analysis Batch: 16721

Client Sample ID: Outfall 019 Composite
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	0.050	J,DX	0.0400	J,DX	NTU		22	20

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

Lab Sample ID: MB 440-16856/1
Matrix: Water
Analysis Batch: 16856

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			04/02/12 10:26	1

Lab Sample ID: LCS 440-16856/2
Matrix: Water
Analysis Batch: 16856

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	1020		mg/L		102	90 - 110

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

Lab Sample ID: 440-6942-A-4 DU
Matrix: Water
Analysis Batch: 16856

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	620		608		mg/L		1	10

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

Lab Sample ID: MB 440-16993/1
Matrix: Water
Analysis Batch: 16993

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		10	10	mg/L			04/02/12 19:36	1

Lab Sample ID: LCS 440-16993/2
Matrix: Water
Analysis Batch: 16993

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	1000	1000		mg/L		100	85 - 115

Lab Sample ID: 440-7125-A-1 DU
Matrix: Water
Analysis Batch: 16993

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	12		12.0		mg/L		0	10

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

Lab Sample ID: MB 440-16923/1-A
Matrix: Water
Analysis Batch: 16966

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 16923

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	3.0	ug/L		04/02/12 14:41	04/02/12 17:14	1

Lab Sample ID: LCS 440-16923/2-A
Matrix: Water
Analysis Batch: 16966

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 16923

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	108		ug/L		108	90 - 110

Lab Sample ID: 440-6437-D-7-B MS
Matrix: Water
Analysis Batch: 16966

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 16923

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		100	108		ug/L		108	70 - 115

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

Lab Sample ID: 440-6437-D-7-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 16966 — **Prep Batch: 16923**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		100	107		ug/L		107	70 - 115	1	15

Method: SM 4500 NH3 C - Ammonia

Lab Sample ID: MB 440-17213/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 17289 — **Prep Batch: 17213**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.400	0.157	mg/L		04/03/12 16:20	04/03/12 22:04	1

Lab Sample ID: LCS 440-17213/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 17289 — **Prep Batch: 17213**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	10.0	9.520		mg/L		95	85 - 115

Lab Sample ID: 440-7074-1 MS — **Client Sample ID: Outfall 019 Composite**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 17289 — **Prep Batch: 17213**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.280	J,DX	10.0	9.520		mg/L		92	70 - 120

Lab Sample ID: 440-7074-1 MSD — **Client Sample ID: Outfall 019 Composite**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 17289 — **Prep Batch: 17213**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	0.280	J,DX	10.0	9.520		mg/L		92	70 - 120	0	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 440-16887/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 16887

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.75	mg/L			04/02/12 06:09	1

Lab Sample ID: LCS 440-16887/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 16887

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	11.0		mg/L		110	90 - 110

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 440-7074-1 MS
Matrix: Water
Analysis Batch: 16887

Client Sample ID: Outfall 019 Composite
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	ND		5.00	4.17		mg/L		83	80 - 120

Lab Sample ID: 440-7074-1 MSD
Matrix: Water
Analysis Batch: 16887

Client Sample ID: Outfall 019 Composite
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	ND		5.00	4.18		mg/L		84	80 - 120	0	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 440-16715/3
Matrix: Water
Analysis Batch: 16715

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			03/30/12 22:25	1

Lab Sample ID: LCS 440-16715/4
Matrix: Water
Analysis Batch: 16715

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	0.250	0.247		mg/L		99	90 - 110

Lab Sample ID: 440-7074-1 MS
Matrix: Water
Analysis Batch: 16715

Client Sample ID: Outfall 019 Composite
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	ND		0.250	0.257		mg/L		103	50 - 125

Lab Sample ID: 440-7074-1 MSD
Matrix: Water
Analysis Batch: 16715

Client Sample ID: Outfall 019 Composite
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Blue Active Substances	ND		0.250	0.272		mg/L		109	50 - 125	6	20

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 440-16743/1 USB
Matrix: Water
Analysis Batch: 16743

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

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	0.50	mg/L			03/31/12 10:50	1

Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: LCS 440-16743/4
Matrix: Water
Analysis Batch: 16743

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Biochemical Oxygen Demand			199	209		mg/L		105	85 - 115		

Lab Sample ID: LCSD 440-16743/5
Matrix: Water
Analysis Batch: 16743

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand			199	211		mg/L		106	85 - 115	1	20

Method: Gross Alpha and Beta - Gross Alpha/Beta

Lab Sample ID: S204013-04
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	0.122	U	20		pCi/L		04/05/12 00:00	04/05/12 00:00	1
Potassium-40	-13.4	U	25		pCi/L		04/05/12 00:00	04/05/12 00:00	1

Lab Sample ID: S204013-04
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	-0.061	U	1		pCi/L		04/11/12 00:00	04/11/12 13:39	1

Lab Sample ID: S204013-04
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	-0.029	U	2		pCi/L		04/12/12 00:00	04/12/12 07:08	1

Lab Sample ID: S204013-04
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	-1.47	U	500		pCi/L		04/13/12 00:00	04/14/12 03:26	1

Lab Sample ID: S204013-04
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.031	U	3		pCi/L		04/12/12 00:00	04/17/12 15:49	1
Gross Beta	-0.028	U	4		pCi/L		04/12/12 00:00	04/17/12 15:49	1

Method: Gross Alpha and Beta - Gross Alpha/Beta (Continued)

Lab Sample ID: S204013-04
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	-0.085	U	1		pCi/L		04/18/12 00:00	04/18/12 14:11	1

Lab Sample ID: S204013-07
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0	U	1		pCi/L		04/17/12 00:00	04/17/12 11:21	1

Lab Sample ID: S204013-03
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cesium-137	122	127		pCi/L		104	80 - 120
Cobalt-60	108	107		pCi/L		99	80 - 120

Lab Sample ID: S204013-03
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Radium-226	50.1	54.2		pCi/L		108	80 - 120

Lab Sample ID: S204013-03
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Strontium-90	9.35	9.3		pCi/L		99	80 - 120

Lab Sample ID: S204013-03
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tritium	403	391	J	pCi/L		97	80 - 120

Lab Sample ID: S204013-03
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Radium-228	5.31	5.35		pCi/L		101	60 - 140

Lab Sample ID: S204013-03
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gross Alpha	37	47.8		pCi/L		129	70 - 130

Method: Gross Alpha and Beta - Gross Alpha/Beta (Continued)

Lab Sample ID: S204013-03
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gross Beta	34	33.1		pCi/L		97	70 - 130

Lab Sample ID: S204013-06
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium, Total	56.5	64.6		pCi/L		114	80 - 120

Lab Sample ID: S204013-05
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: OUTFALL 019 (440-7074-1) DU
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Cesium-137	-0.861	U	0.375	U	pCi/L		0	
Potassium-40	-11.7	U	-3.84	U	pCi/L		0	

Lab Sample ID: S204013-05
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: OUTFALL 019 (440-7074-1) DU
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Radium-226	0.205	U	-0.143	U	pCi/L		0	

Lab Sample ID: S204013-05
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: OUTFALL 019 (440-7074-1) DU
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Strontium-90	0.357	U	0.33	U	pCi/L		0	

Lab Sample ID: S204013-05
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: OUTFALL 019 (440-7074-1) DU
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Tritium	-10.5	U	-73.4	U	pCi/L		0	

Lab Sample ID: S204013-05
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: OUTFALL 019 (440-7074-1) DU
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Gross Alpha	-0.609	U	-0.122	U	pCi/L		0	
Gross Beta	3.23	J	2.93	J	pCi/L		10	

Method: Gross Alpha and Beta - Gross Alpha/Beta (Continued)

Lab Sample ID: S204013-05
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: OUTFALL 019 (440-7074-1) DU
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Radium-228	0.034	U		-0.104	U	pCi/L				0	

Lab Sample ID: S204013-08
Matrix: WATER
Analysis Batch: 8604

Client Sample ID: OUTFALL 019 (440-7074-1) DU
Prep Type: Total/NA
Prep Batch: 8604_P

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Uranium, Total	0.034	J		0.032	J	pCi/L				6	

GC/MS VOA

Analysis Batch: 16434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-5955-N-2 MS	Matrix Spike	Total/NA	Water	624	
440-5955-N-2 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
440-6927-1	Outfall 019 Grab	Total/NA	Water	624	
440-6927-2	Trip Blank	Total/NA	Water	624	
LCS 440-16434/5	Lab Control Sample	Total/NA	Water	624	
MB 440-16434/4	Method Blank	Total/NA	Water	624	

GC/MS Semi VOA

Prep Batch: 16977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	625	
LCS 440-16977/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 440-16977/3-A	Lab Control Sample Dup	Total/NA	Water	625	
MB 440-16977/1-A	Method Blank	Total/NA	Water	625	

Analysis Batch: 18525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	625	16977
LCS 440-16977/2-A	Lab Control Sample	Total/NA	Water	625	16977
LCSD 440-16977/3-A	Lab Control Sample Dup	Total/NA	Water	625	16977
MB 440-16977/1-A	Method Blank	Total/NA	Water	625	16977

GC Semi VOA

Prep Batch: 16796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	608	
LCS 440-16796/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-16796/3-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-16796/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 17166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	608	16796
LCS 440-16796/2-A	Lab Control Sample	Total/NA	Water	608	16796
LCSD 440-16796/3-A	Lab Control Sample Dup	Total/NA	Water	608	16796
MB 440-16796/1-A	Method Blank	Total/NA	Water	608	16796

HPLC/IC

Analysis Batch: 16543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7032-A-10 MS	Matrix Spike	Total/NA	Water	300.0	
440-7032-A-10 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-7074-1	Outfall 019 Composite	Total/NA	Water	300.0	
LCS 440-16543/9	Lab Control Sample	Total/NA	Water	300.0	
MB 440-16543/2	Method Blank	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 16544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	300.0	
LCS 440-16544/9	Lab Control Sample	Total/NA	Water	300.0	
MB 440-16544/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 17114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	314.0	
440-7074-1 MS	Outfall 019 Composite	Total/NA	Water	314.0	
440-7074-1 MSD	Outfall 019 Composite	Total/NA	Water	314.0	
LCS 440-17114/4	Lab Control Sample	Total/NA	Water	314.0	
MB 440-17114/5	Method Blank	Total/NA	Water	314.0	

Specialty Organics

Analysis Batch: 2095076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total	Water	1613B	
G2D040000076B	Method Blank	Total	Water	1613B	
G2D040000076C	Lab Control Sample	Total	Water	1613B	

Prep Batch: 2095076_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total	Water	3542	
G2D040000076B	Method Blank	Total	Water	3542	
G2D040000076C	Lab Control Sample	Total	Water	3542	

Metals

Prep Batch: 16911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	245.1	
440-7074-1 MS	Outfall 019 Composite	Total/NA	Water	245.1	
440-7074-1 MSD	Outfall 019 Composite	Total/NA	Water	245.1	
LCS 440-16911/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-16911/1-A	Method Blank	Total/NA	Water	245.1	

Prep Batch: 16913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Dissolved	Water	245.1	
440-7074-1 MS	Outfall 019 Composite	Dissolved	Water	245.1	
440-7074-1 MSD	Outfall 019 Composite	Dissolved	Water	245.1	
LCS 440-16905/2-B	Lab Control Sample	Dissolved	Water	245.1	
MB 440-16905/1-B	Method Blank	Dissolved	Water	245.1	

Prep Batch: 16920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total Recoverable	Water	200.2	
440-7074-1 MS	Outfall 019 Composite	Total Recoverable	Water	200.2	
440-7074-1 MSD	Outfall 019 Composite	Total Recoverable	Water	200.2	
LCS 440-16920/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-16920/1-A	Method Blank	Total Recoverable	Water	200.2	

Metals (Continued)

Prep Batch: 16921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Dissolved	Water	200.2	
LCS 440-16905/2-C	Lab Control Sample	Dissolved	Water	200.2	
LCSD 440-16921/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.2	
MB 440-16905/1-C	Method Blank	Dissolved	Water	200.2	

Prep Batch: 16922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total Recoverable	Water	200.2	
440-7074-1 MS	Outfall 019 Composite	Total Recoverable	Water	200.2	
440-7074-1 MSD	Outfall 019 Composite	Total Recoverable	Water	200.2	
LCS 440-16922/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-16922/1-A	Method Blank	Total Recoverable	Water	200.2	

Prep Batch: 16924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Dissolved	Water	200.2	
LCS 440-16905/2-D	Lab Control Sample	Dissolved	Water	200.2	
LCSD 440-16905/4-B	Lab Control Sample Dup	Dissolved	Water	200.2	
MB 440-16905/1-D	Method Blank	Dissolved	Water	200.2	

Analysis Batch: 16968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	245.1	16911
440-7074-1	Outfall 019 Composite	Dissolved	Water	245.1	16913
440-7074-1 MS	Outfall 019 Composite	Total/NA	Water	245.1	16911
440-7074-1 MS	Outfall 019 Composite	Dissolved	Water	245.1	16913
440-7074-1 MSD	Outfall 019 Composite	Total/NA	Water	245.1	16911
440-7074-1 MSD	Outfall 019 Composite	Dissolved	Water	245.1	16913
LCS 440-16905/2-B	Lab Control Sample	Dissolved	Water	245.1	16913
LCS 440-16911/2-A	Lab Control Sample	Total/NA	Water	245.1	16911
MB 440-16905/1-B	Method Blank	Dissolved	Water	245.1	16913
MB 440-16911/1-A	Method Blank	Total/NA	Water	245.1	16911

Analysis Batch: 16986

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total Recoverable	Water	200.7 Rev 4.4	16920
440-7074-1	Outfall 019 Composite	Dissolved	Water	200.7 Rev 4.4	16921
440-7074-1 MS	Outfall 019 Composite	Total Recoverable	Water	200.7 Rev 4.4	16920
440-7074-1 MSD	Outfall 019 Composite	Total Recoverable	Water	200.7 Rev 4.4	16920
LCS 440-16905/2-C	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	16921
LCS 440-16920/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	16920
LCSD 440-16921/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	16921
MB 440-16905/1-C	Method Blank	Dissolved	Water	200.7 Rev 4.4	16921
MB 440-16920/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	16920

Analysis Batch: 17187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total Recoverable	Water	200.8	16922
440-7074-1	Outfall 019 Composite	Dissolved	Water	200.8	16924
440-7074-1 MS	Outfall 019 Composite	Total Recoverable	Water	200.8	16922
440-7074-1 MSD	Outfall 019 Composite	Total Recoverable	Water	200.8	16922
LCS 440-16905/2-D	Lab Control Sample	Dissolved	Water	200.8	16924

Metals (Continued)

Analysis Batch: 17187 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-16922/2-A	Lab Control Sample	Total Recoverable	Water	200.8	16922
LCSD 440-16905/4-B	Lab Control Sample Dup	Dissolved	Water	200.8	16924
MB 440-16905/1-D	Method Blank	Dissolved	Water	200.8	16924
MB 440-16922/1-A	Method Blank	Total Recoverable	Water	200.8	16922

Analysis Batch: 17342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total Recoverable	Water	200.8	16922
440-7074-1	Outfall 019 Composite	Dissolved	Water	200.8	16924
440-7074-1 MS	Outfall 019 Composite	Total Recoverable	Water	200.8	16922
440-7074-1 MSD	Outfall 019 Composite	Total Recoverable	Water	200.8	16922
LCS 440-16905/2-D	Lab Control Sample	Dissolved	Water	200.8	16924
LCS 440-16922/2-A	Lab Control Sample	Total Recoverable	Water	200.8	16922
LCSD 440-16924/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
MB 440-16905/1-D	Method Blank	Dissolved	Water	200.8	16924
MB 440-16922/1-A	Method Blank	Total Recoverable	Water	200.8	16922

General Chemistry

Analysis Batch: 16470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-6927-1	Outfall 019 Grab	Total/NA	Water	SM 2540F	

Prep Batch: 16524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-6927-1	Outfall 019 Grab	Total/NA	Water	1664A	
LCS 440-16524/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-16524/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-16524/1-A	Method Blank	Total/NA	Water	1664A	

Analysis Batch: 16566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-6927-1	Outfall 019 Grab	Total/NA	Water	1664A	16524
LCS 440-16524/2-A	Lab Control Sample	Total/NA	Water	1664A	16524
LCSD 440-16524/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	16524
MB 440-16524/1-A	Method Blank	Total/NA	Water	1664A	16524

Analysis Batch: 16715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	SM 5540C	
440-7074-1 MS	Outfall 019 Composite	Total/NA	Water	SM 5540C	
440-7074-1 MSD	Outfall 019 Composite	Total/NA	Water	SM 5540C	
LCS 440-16715/4	Lab Control Sample	Total/NA	Water	SM 5540C	
MB 440-16715/3	Method Blank	Total/NA	Water	SM 5540C	

Analysis Batch: 16721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	180.1	
440-7074-1 DU	Outfall 019 Composite	Total/NA	Water	180.1	
MB 440-16721/6	Method Blank	Total/NA	Water	180.1	
MRL 440-16721/4 MRL	Lab Control Sample	Total/NA	Water	180.1	

General Chemistry (Continued)

Analysis Batch: 16743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	SM5210B	
LCS 440-16743/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-16743/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	
USB 440-16743/1 USB	Method Blank	Total/NA	Water	SM5210B	

Analysis Batch: 16856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-6942-A-4 DU	Duplicate	Total/NA	Water	SM 2540C	
440-7074-1	Outfall 019 Composite	Total/NA	Water	SM 2540C	
LCS 440-16856/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-16856/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 16887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	SM 5310B	
440-7074-1 MS	Outfall 019 Composite	Total/NA	Water	SM 5310B	
440-7074-1 MSD	Outfall 019 Composite	Total/NA	Water	SM 5310B	
LCS 440-16887/6	Lab Control Sample	Total/NA	Water	SM 5310B	
MB 440-16887/5	Method Blank	Total/NA	Water	SM 5310B	

Prep Batch: 16923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-6437-D-7-B MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-6437-D-7-D MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
440-7074-1	Outfall 019 Composite	Total/NA	Water	Distill/CN	
LCS 440-16923/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-16923/1-A	Method Blank	Total/NA	Water	Distill/CN	

Analysis Batch: 16966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-6437-D-7-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	16923
440-6437-D-7-D MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	16923
440-7074-1	Outfall 019 Composite	Total/NA	Water	SM 4500 CN E	16923
LCS 440-16923/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	16923
MB 440-16923/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	16923

Analysis Batch: 16993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	SM 2540D	
440-7125-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	
LCS 440-16993/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-16993/1	Method Blank	Total/NA	Water	SM 2540D	

Prep Batch: 17213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	SM 4500 NH3 B	
440-7074-1 MS	Outfall 019 Composite	Total/NA	Water	SM 4500 NH3 B	
440-7074-1 MSD	Outfall 019 Composite	Total/NA	Water	SM 4500 NH3 B	
LCS 440-17213/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 440-17213/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

General Chemistry (Continued)

Analysis Batch: 17289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	SM 4500 NH3 C	17213
440-7074-1 MS	Outfall 019 Composite	Total/NA	Water	SM 4500 NH3 C	17213
440-7074-1 MSD	Outfall 019 Composite	Total/NA	Water	SM 4500 NH3 C	17213
LCS 440-17213/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 C	17213
MB 440-17213/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 C	17213

Subcontract

Analysis Batch: 8604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	Gamma Spec K-40 CS-137	8604_P
440-7074-1	Outfall 019 Composite	Total/NA	Water	Gross Alpha and Beta	8604_P
440-7074-1	Outfall 019 Composite	Total/NA	Water	Radium 226	8604_P
440-7074-1	Outfall 019 Composite	Total/NA	Water	Radium 228	8604_P
440-7074-1	Outfall 019 Composite	Total/NA	Water	Strontium 90	8604_P
440-7074-1	Outfall 019 Composite	Total/NA	Water	Tritium	8604_P
440-7074-1	Outfall 019 Composite	Total/NA	Water	Uranium, Combined	8604_P
440-7074-3	Outfall 019 Composite - TB Eberline	Total/NA	Water	Gamma Spec K-40 CS-137	8604_P
440-7074-3	Outfall 019 Composite - TB Eberline	Total/NA	Water	Gross Alpha and Beta	8604_P
440-7074-3	Outfall 019 Composite - TB Eberline	Total/NA	Water	Radium 226	8604_P
440-7074-3	Outfall 019 Composite - TB Eberline	Total/NA	Water	Radium 228	8604_P
440-7074-3	Outfall 019 Composite - TB Eberline	Total/NA	Water	Strontium 90	8604_P
440-7074-3	Outfall 019 Composite - TB Eberline	Total/NA	Water	Uranium, Combined	8604_P
S204013-03	Lab Control Sample	Total/NA	WATER	Gross Alpha and Beta	8604_P
S204013-04	Method Blank	Total/NA	WATER	Gross Alpha and Beta	8604_P
S204013-05	OUTFALL 019 (440-7074-1) DU	Total/NA	WATER	Gross Alpha and Beta	8604_P
S204013-06	Lab Control Sample	Total/NA	WATER	Gross Alpha and Beta	8604_P
S204013-07	Method Blank	Total/NA	WATER	Gross Alpha and Beta	8604_P
S204013-08	OUTFALL 019 (440-7074-1) DU	Total/NA	WATER	Gross Alpha and Beta	8604_P

Prep Batch: 8604_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7074-1	Outfall 019 Composite	Total/NA	Water	General Prep	
440-7074-3	Outfall 019 Composite - TB Eberline	Total/NA	Water	General Prep	
S204013-03	Lab Control Sample	Total/NA	WATER	General Prep	
S204013-04	Method Blank	Total/NA	WATER	General Prep	
S204013-05	OUTFALL 019 (440-7074-1) DU	Total/NA	WATER	General Prep	
S204013-06	Lab Control Sample	Total/NA	WATER	General Prep	
S204013-07	Method Blank	Total/NA	WATER	General Prep	
S204013-08	OUTFALL 019 (440-7074-1) DU	Total/NA	WATER	General Prep	

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

HPLC/IC

Qualifier	Qualifier Description
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
AY	Matrix Interference suspected

DIOXIN

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

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Subcontract

Qualifier	Qualifier Description
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-6927-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Irvine	Arizona	State Program	9	AZ0671
TestAmerica Irvine	California	LA Cty Sanitation Districts	9	10256
TestAmerica Irvine	California	NELAC	9	1108CA
TestAmerica Irvine	California	State Program	9	2706
TestAmerica Irvine	Guam	State Program	9	Cert. No. 12.002r
TestAmerica Irvine	Hawaii	State Program	9	N/A
TestAmerica Irvine	Nevada	State Program	9	CA015312007A
TestAmerica Irvine	New Mexico	State Program	6	N/A
TestAmerica Irvine	Northern Mariana Islands	State Program	9	MP0002
TestAmerica Irvine	Oregon	NELAC	10	4005
TestAmerica Irvine	USDA	Federal		P330-09-00080
TestAmerica West Sacramento	A2LA	DoD ELAP		2928-01
TestAmerica West Sacramento	Alaska (UST)	State Program	10	UST-055
TestAmerica West Sacramento	Arizona	State Program	9	AZ0708
TestAmerica West Sacramento	Arkansas DEQ	State Program	6	88-0691
TestAmerica West Sacramento	California	NELAC	9	1119CA
TestAmerica West Sacramento	California	NELAC Primary AB	9	MP0007
TestAmerica West Sacramento	Colorado	State Program	8	N/A
TestAmerica West Sacramento	Connecticut	State Program	1	PH-0691
TestAmerica West Sacramento	Florida	NELAC	4	E87570
TestAmerica West Sacramento	Georgia	State Program	4	960
TestAmerica West Sacramento	Guam	State Program	9	N/A
TestAmerica West Sacramento	Hawaii	State Program	9	N/A
TestAmerica West Sacramento	Illinois	NELAC	5	200060
TestAmerica West Sacramento	Kansas	NELAC	7	E-10375
TestAmerica West Sacramento	Louisiana	NELAC	6	30612
TestAmerica West Sacramento	Michigan	State Program	5	9947
TestAmerica West Sacramento	Nevada	State Program	9	CA44
TestAmerica West Sacramento	New Jersey	NELAC	2	CA005
TestAmerica West Sacramento	New Mexico	State Program	6	N/A
TestAmerica West Sacramento	New York	NELAC	2	11666
TestAmerica West Sacramento	Northern Mariana Islands	State Program	9	MP0007
TestAmerica West Sacramento	Oregon	NELAC	10	CA200005
TestAmerica West Sacramento	Pennsylvania	NELAC	3	68-01272
TestAmerica West Sacramento	South Carolina	State Program	4	87014
TestAmerica West Sacramento	Texas	NELAC	6	T104704399-08-TX
TestAmerica West Sacramento	US Fish & Wildlife	Federal		LE148388-0
TestAmerica West Sacramento	USDA	Federal		P330-09-00055
TestAmerica West Sacramento	Utah	NELAC	8	QUAN1
TestAmerica West Sacramento	Virginia	State Program	3	178
TestAmerica West Sacramento	Washington	State Program	10	C581
TestAmerica West Sacramento	West Virginia	State Program	3	9930C
TestAmerica West Sacramento	West Virginia DEP	State Program	3	334
TestAmerica West Sacramento	Wisconsin	State Program	5	998204680
TestAmerica West Sacramento	Wyoming	State Program	8	8TMS-Q

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

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

April 25, 2012

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

Reference: **Test America-Irvine 44002624**
Eberline Analytical Report S204013-8604
Sample Delivery Group 8604

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for two water samples received under Test America Project No. 44002624. The samples were received on April 3, 2012.

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 8604 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.

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."

4/25/12

Joseph Verville
Client Services Manager

Date

SDG 8604	Client Test America, Inc.
Contact Joseph Verville	Contract 44002624

SUMMARY DATA SECTION

TABLE OF CONTENTS

Prepared by

Reviewed by

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	04/25/12

SDG 8604
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

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
Form DVD-RG
Version 3.06
Report date 04/25/12

SDG 8604
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

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
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

LAB SAMPLE SUMMARY

SDG 8604
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S204013-01	OUTFALL 019 (440-7074-1)	BOEING-SSFL	WATER			440-3397.1	03/30/12 10:00
S204013-02	TRIP BLANK (440-7074-3)	BOEING-SSFL	WATER			440-3397.1	03/30/12 10:00
S204013-03	Lab Control Sample		WATER				
S204013-04	Method Blank		WATER				
S204013-05	Duplicate (S204013-01)	BOEING-SSFL	WATER				03/30/12 10:00
S204013-06	Lab Control Sample		WATER				
S204013-07	Method Blank		WATER				
S204013-08	Duplicate (S204013-01)	BOEING-SSFL	WATER				03/30/12 10:00

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 04/25/12

SDG 8604
Contact Joseph Verville

QC SUMMARY

Client Test America, Inc.
Contract 44002624

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
8604	440-3397.1	OUTFALL 019 (440-7074-1)	WATER		10.0 L		04/03/12	4	S204013-01	8604-001
		TRIP BLANK (440-7074-3)	WATER		10.0 L		04/03/12	4	S204013-02	8604-002
		Method Blank	WATER						S204013-04	8604-004
		Method Blank	WATER						S204013-07	8604-007
		Lab Control Sample	WATER						S204013-03	8604-003
		Lab Control Sample	WATER						S204013-06	8604-006
		Duplicate (S204013-01)	WATER		10.0 L		04/03/12	4	S204013-05	8604-005
		Duplicate (S204013-01)	WATER		10.0 L		04/03/12	4	S204013-08	8604-008

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

PREP BATCH SUMMARY

SDG 8604
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

TEST	MATRIX	METHOD	PREPARATION ERROR BATCH	2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Beta Counting												
AC	WATER	Radium-228 in Water	7726-046	10.4	2			1	1	1/1		
SR	WATER	Strontium-90 in Water	7726-046	10.4	2			1	1	1/1		
Gas Proportional Counting												
80A	WATER	Gross Alpha in Water	7726-046	20.6	2			1	1	1/1		
80B	WATER	Gross Beta in Water	7726-046	11.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	WATER	Gamma Emitters in Water	7726-046	7.0	2			1	1	1/1		
Kinetic Phosphorimetry												
U_T	WATER	Uranium, Total	7726-046		2			1	1	1/1		
Liquid Scintillation Counting												
H	WATER	Tritium in Water	7726-046	10.0	1			1	1	1/1		
Radon Counting												
RA	WATER	Radium-226 in Water	7726-046	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
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

SDG 8604
Contact Joseph Verville

LAB WORK SUMMARY

Client Test America, Inc.
Contract 44002624

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY / SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S204013-01	OUTFALL 019 (440-7074-1)		8604-001	80A/80		04/17/12	04/18/12	BW	Gross Alpha in Water
03/30/12	BOEING-SSFL	WATER	8604-001	80B/80		04/17/12	04/18/12	BW	Gross Beta in Water
04/03/12	440-3397.1		8604-001	AC		04/18/12	04/19/12	BW	Radium-228 in Water
			8604-001	GAM		04/05/12	04/11/12	BW	Gamma Emitters in Water
			8604-001	H		04/14/12	04/17/12	BW	Tritium in Water
			8604-001	RA		04/11/12	04/11/12	BW	Radium-226 in Water
			8604-001	SR		04/12/12	04/17/12	BW	Strontium-90 in Water
			8604-001	U_T	A1	04/17/12	04/17/12	AK	Uranium, Total
S204013-02	TRIP BLANK (440-7074-3)		8604-002	80A/80		04/17/12	04/18/12	BW	Gross Alpha in Water
03/30/12	BOEING-SSFL	WATER	8604-002	80B/80		04/17/12	04/18/12	BW	Gross Beta in Water
04/03/12	440-3397.1		8604-002	AC		04/18/12	04/19/12	BW	Radium-228 in Water
			8604-002	GAM		04/05/12	04/11/12	BW	Gamma Emitters in Water
			8604-002	RA		04/11/12	04/11/12	BW	Radium-226 in Water
			8604-002	SR		04/12/12	04/17/12	BW	Strontium-90 in Water
			8604-002	U_T	A1	04/17/12	04/17/12	AK	Uranium, Total
S204013-03	Lab Control Sample		8604-003	80A/80		04/25/12	04/25/12	BW	Gross Alpha in Water
		WATER	8604-003	80B/80		04/25/12	04/25/12	BW	Gross Beta in Water
			8604-003	AC		04/18/12	04/19/12	BW	Radium-228 in Water
			8604-003	GAM		04/10/12	04/11/12	BW	Gamma Emitters in Water
			8604-003	H		04/14/12	04/17/12	BW	Tritium in Water
			8604-003	RA		04/11/12	04/11/12	BW	Radium-226 in Water
			8604-003	SR		04/12/12	04/17/12	BW	Strontium-90 in Water
S204013-04	Method Blank		8604-004	80A/80		04/17/12	04/18/12	BW	Gross Alpha in Water
		WATER	8604-004	80B/80		04/17/12	04/18/12	BW	Gross Beta in Water
			8604-004	AC		04/18/12	04/19/12	BW	Radium-228 in Water
			8604-004	GAM		04/05/12	04/11/12	BW	Gamma Emitters in Water
			8604-004	H		04/14/12	04/17/12	BW	Tritium in Water
			8604-004	RA		04/11/12	04/11/12	BW	Radium-226 in Water
			8604-004	SR		04/12/12	04/17/12	BW	Strontium-90 in Water

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 04/25/12

SDG 8604
Contact Joseph Verville

WORK SUMMARY, cont.

Client Test America, Inc.
Contract 44002624

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S204013-05	Duplicate (S204013-01)			8604-005	80A/80		04/17/12	04/18/12	BW	Gross Alpha in Water
03/30/12	BOEING-SSFL		WATER	8604-005	80B/80		04/17/12	04/18/12	BW	Gross Beta in Water
04/03/12				8604-005	AC		04/18/12	04/19/12	BW	Radium-228 in Water
				8604-005	GAM		04/06/12	04/11/12	BW	Gamma Emitters in Water
				8604-005	H		04/14/12	04/17/12	BW	Tritium in Water
				8604-005	RA		04/11/12	04/11/12	BW	Radium-226 in Water
				8604-005	SR		04/12/12	04/17/12	BW	Strontium-90 in Water
S204013-06	Lab Control Sample		WATER	8604-006	U_T		04/17/12	04/17/12	AK	Uranium, Total
S204013-07	Method Blank		WATER	8604-007	U_T		04/17/12	04/17/12	AK	Uranium, Total
S204013-08	Duplicate (S204013-01)			8604-008	U_T		04/17/12	04/17/12	AK	Uranium, Total
03/30/12	BOEING-SSFL		WATER							
04/03/12										

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 04/25/12

8604-004 Method Blank

METHOD BLANK

SDG 8604 Client Test America, Inc.
Contact Joseph Verville Contract 44002624

Lab sample id S204013-04 Client sample id Method Blank
Dept sample id 8604-004 Material/Matrix WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	-0.031	0.30	0.555	3.00	U	80A
Gross Beta	12587472	-0.028	0.55	0.925	4.00	U	80B
Tritium	10028178	-1.47	17	29.1	500	U	H
Radium-226	13982633	-0.061	0.33	0.609	1.00	U	RA
Radium-228	15262201	-0.085	0.12	0.412	1.00	U	AC
Strontium-90	10098972	-0.029	0.22	0.516	2.00	U	SR
Potassium-40	13966002	-13.4	22	40.5	25.0	U	GAM
Cesium-137	10045973	0.122	1.6	2.74	20.0	U	GAM

QC-BLANK #81472

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 04/25/12

8604-007 Method Blank

METHOD BLANK

SDG	8604	Client	Test America, Inc.
Contact	Joseph Verville	Contract	44002624
Lab sample id	S204013-07	Client sample id	Method Blank
Dept sample id	8604-007	Material/Matrix	WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Uranium, Total		0	0.009	0.021	1.00	U	U_T

QC-BLANK #81571

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/25/12

EBERLINE ANALYTICAL

SDG 8604

8604-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 8604 | Client Test America, Inc.

Contact Joseph Verville | Contract 44002624

Lab sample id S204013-03 | Client sample id Lab Control Sample

Dept sample id 8604-003 | Material/Matrix WATER

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	47.8	4.9	1.29	3.00		80A	37.0	1.5	129	70-130	70-130
Gross Beta	33.1	2.7	2.30	4.00		80B	34.0	1.4	97	86-114	70-130
Tritium	391	27	28.7	500	J	H	403	16	97	88-112	80-120
Radium-226	54.2	2.1	0.602	1.00		RA	50.1	2.0	108	81-119	80-120
Radium-228	5.35	0.32	0.463	1.00		AC	5.31	0.21	101	87-113	60-140
Strontium-90	9.30	0.36	0.150	2.00		SR	9.35	0.37	99	88-112	80-120
Cobalt-60	107	4.8	3.88	10.0		GAM	108	4.3	99	91-109	80-120
Cesium-137	127	4.6	4.46	20.0		GAM	122	4.9	104	91-109	80-120

QC-LCS #81471

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

8604-006

Lab Control Sample

LAB CONTROL SAMPLE

SDG 8604	Client Test America, Inc.
Contact Joseph Verville	Contract 44002624
Lab sample id S204013-06	Client sample id Lab Control Sample
Dept sample id 8604-006	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
Uranium, Total	64.6	7.4	0.209	1.00		U_T	56.5	2.3	114	86-114	80-120

QC-LCS #81570

LAB CONTROL SAMPLES
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Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

8604-005

OUTFALL 019 (440-7074-1)

DUPLICATE

SDG 8604
Contact Joseph Verville
Client Test America, Inc.
Contract 44002624

DUPLICATE	ORIGINAL	
Lab sample id S204013-05	Lab sample id S204013-01	Client sample id OUTFALL 019 (440-7074-1)
Dept sample id 8604-005	Dept sample id 8604-001	Location/Matrix BOEING-SSFL WATER
	Received 04/03/12	Collected/Volume 03/30/12 10:00 10.0 L
		Chain of custody id 440-3397.1

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	-0.122	0.72	1.35	3.00	U	80A	-0.609	0.48	1.20	U	-		1.1
Gross Beta	2.93	1.4	2.16	4.00	J	80B	3.23	1.1	1.58	J	10	90	0.3
Tritium	-73.4	99	173	500	U	H	-10.5	100	173	U	-		0.9
Radium-226	-0.143	0.37	0.700	1.00	U	RA	0.205	0.38	0.656	U	-		1.3
Radium-228	-0.104	0.16	0.451	1.00	U	AC	0.034	0.14	0.433	U	-		1.3
Strontium-90	0.330	0.54	1.10	2.00	U	SR	0.357	0.42	0.837	U	-		0.1
Potassium-40	-3.84	14	25.9	25.0	U	GAM	-11.7	21	37.4	U	-		0.6
Cesium-137	0.375	1.9	3.30	20.0	U	GAM	-0.861	1.7	2.99	U	-		1.0

QC-DUP#1 81473

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 04/25/12

DUPLICATES
Page 1
SUMMARY DATA SECTION
Page 12

EBERLINE ANALYTICAL

SDG 8604

8604-008

OUTFALL 019 (440-7074-1)

DUPLICATE

SDG 8604
Contact Joseph Verville

DUPLICATE
Lab sample id S204013-08
Dept sample id 8604-008

ORIGINAL
Lab sample id S204013-01
Dept sample id 8604-001
Received 04/03/12

Client Test America, Inc.
Contract 44002624

Client sample id OUTFALL 019 (440-7074-1)
Location/Matrix BOEING-SSFL WATER
Collected/Volume 03/30/12 10:00 10.0 L
Chain of custody id 440-3397.1

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
Uranium, Total	0.032	0.010	0.021	1.00	J	U_T	0.034	0.010	0.021	J	6	64	0.3

QC-DUP#1 81572

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

8604-001 OUTFALL 019 (440-7074-1)

DATA SHEET

SDG	8604	Client	Test America, Inc.
Contact	Joseph Verville	Contract	44002624
Lab sample id	S204013-01	Client sample id	OUTFALL 019 (440-7074-1)
Dept sample id	8604-001	Location/Matrix	BOEING-SSFL WATER
Received	04/03/12	Collected/Volume	03/30/12 10:00 10.0 L
		Chain of custody id	440-3397.1

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	-0.609	0.48	1.20	3.00	U	80A
Gross Beta	12587472	3.23	1.1	1.58	4.00	J	80B
Tritium	10028178	-10.5	100	173	500	U	H
Radium-226	13982633	0.205	0.38	0.656	1.00	U	RA
Radium-228	15262201	0.034	0.14	0.433	1.00	U	AC
Strontium-90	10098972	0.357	0.42	0.837	2.00	U	SR
Uranium, Total		0.034	0.010	0.021	1.00	J	U_T
Potassium-40	13966002	-11.7	21	37.4	25.0	U	GAM
Cesium-137	10045973	-0.861	1.7	2.99	20.0	U	GAM

DATA SHEETS
Page 1
SUMMARY DATA SECTION
Page 14

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/25/12

8604-002 TRIP BLANK (440-7074-3)

DATA SHEET

SDG 8604 Client Test America, Inc.
Contact Joseph Verville Contract 44002624

Lab sample id S204013-02 Client sample id TRIP BLANK (440-7074-3)
Dept sample id 8604-002 Location/Matrix BOEING-SSFL WATER
Received 04/03/12 Collected/Volume 03/30/12 10:00 10.0 L
Chain of custody id 440-3397.1

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587461	0.089	0.13	0.214	3.00	U	80A
Gross Beta	12587472	-0.325	0.46	0.799	4.00	U	80B
Radium-226	13982633	-0.011	0.33	0.598	1.00	U	RA
Radium-228	15262201	-0.030	0.12	0.401	1.00	U	AC
Strontium-90	10098972	0.188	0.42	0.904	2.00	U	SR
Uranium, Total		0	0.009	0.021	1.00	U	U_T
Potassium-40	13966002	8.16	32	56.4	25.0	U	GAM
Cesium-137	10045973	0.298	2.6	3.26	20.0	U	GAM

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix WATER
SDG 8604
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Radium-228	
Preparation batch 7726-046						
S204013-01			8604-001	OUTFALL 019 (440-7074-1)	U	
S204013-02			8604-002	TRIP BLANK (440-7074-3)	U	
S204013-03			8604-003	Lab Control Sample	ok	
S204013-04			8604-004	Method Blank	U	
S204013-05			8604-005	Duplicate (S204013-01)	-	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 7726-046			2σ prep error 10.4 %	Reference Lab Notebook 7724 pg. 119												
S204013-01			OUTFALL 019 (440-7074-1)	0.433	1.80			79	115				19	04/18/12	04/18	GRB-221
S204013-02			TRIP BLANK (440-7074-3)	0.401	1.80			85	115				19	04/18/12	04/18	GRB-222
S204013-03			Lab Control Sample	0.463	1.80			82	150					04/18/12	04/18	GRB-206
S204013-04			Method Blank	0.412	1.80			82	115					04/18/12	04/18	GRB-223
S204013-05			Duplicate (S204013-01)	0.451	1.80			83	115				19	04/18/12	04/18	GRB-224
Nominal values and limits from method				1.00	1.80			30-105	50				180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.432 ± 0.052
YIELD 82 ± 4

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/25/12

METHOD SUMMARIES
Page 1
SUMMARY DATA SECTION
Page 16

EBERLINE ANALYTICAL

SDG 8604

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR Matrix WATER
SDG 8604
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Strontium-90	
Preparation batch 7726-046						
S204013-01			8604-001	OUTFALL 019 (440-7074-1)	U	
S204013-02			8604-002	TRIP BLANK (440-7074-3)	U	
S204013-03			8604-003	Lab Control Sample	ok	
S204013-04			8604-004	Method Blank	U	
S204013-05			8604-005	Duplicate (S204013-01)	-	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 7726-046			2σ prep error 10.4 %	Reference Lab Notebook 7724 pg. 119												
S204013-01			OUTFALL 019 (440-7074-1)	0.837	0.500			89		50			13	04/12/12	04/12	GRB-202
S204013-02			TRIP BLANK (440-7074-3)	0.904	0.500			84		50			13	04/12/12	04/12	GRB-203
S204013-03			Lab Control Sample	0.150	1.00			83		200				04/12/12	04/12	GRB-221
S204013-04			Method Blank	0.516	1.00			80		50				04/12/12	04/12	GRB-201
S204013-05			Duplicate (S204013-01)	1.10	0.500			91		50			13	04/12/12	04/12	GRB-225
Nominal values and limits from method				2.00	1.00			30-105		50			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.701 ± 0.746
YIELD 85 ± 9

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

Test 80A Matrix WATER
SDG 8604
Contact Joseph Verville

LAB METHOD SUMMARY

GROSS ALPHA IN WATER
GAS PROPORTIONAL COUNTING

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
Preparation batch 7726-046						
S204013-01	80		8604-001	OUTFALL 019 (440-7074-1)	U	
S204013-02	80		8604-002	TRIP BLANK (440-7074-3)	U	
S204013-03	80		8604-003	Lab Control Sample	ok	
S204013-04	80		8604-004	Method Blank	U	
S204013-05	80		8604-005	Duplicate (S204013-01)	-	U
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 7726-046			2σ prep error 20.6 %	Reference Lab Notebook 7724 pg. 119												
S204013-01	80		OUTFALL 019 (440-7074-1)	1.20	0.160			91		400			18	04/12/12	04/17	GRB-109
S204013-02	80		TRIP BLANK (440-7074-3)	0.214	0.300			0		400			18	04/12/12	04/17	GRB-111
S204013-03	80		Lab Control Sample	1.29	0.300			60		100				04/12/12	04/25	GRB-107
S204013-04	80		Method Blank	0.555	0.300			61		400				04/12/12	04/17	GRB-105
S204013-05	80		Duplicate (S204013-01)	1.35	0.160			91		400			18	04/12/12	04/17	GRB-107
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 0.922 ± 1.02
RESIDUE 61 ± 74

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

Test 80B Matrix WATER
SDG 8604
Contact Joseph Verville

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
Preparation batch 7726-046						
S204013-01	80		8604-001	OUTFALL 019 (440-7074-1)	3.23	J
S204013-02	80		8604-002	TRIP BLANK (440-7074-3)	U	
S204013-03	80		8604-003	Lab Control Sample	ok	
S204013-04	80		8604-004	Method Blank	U	
S204013-05	80		8604-005	Duplicate (S204013-01)	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 7726-046			2σ prep error 11.0 %	Reference Lab Notebook 7724 pg. 119												
S204013-01	80		OUTFALL 019 (440-7074-1)	1.58	0.160			91		400			18	04/12/12	04/17	GRB-109
S204013-02	80		TRIP BLANK (440-7074-3)	0.799	0.300			0		400			18	04/12/12	04/17	GRB-111
S204013-03	80		Lab Control Sample	2.30	0.300			60		100				04/12/12	04/25	GRB-107
S204013-04	80		Method Blank	0.925	0.300			61		400				04/12/12	04/17	GRB-105
S204013-05	80		Duplicate (S204013-01)	2.16	0.160			91		400			18	04/12/12	04/17	GRB-107
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 1.55 ± 1.37
RESIDUE 61 ± 74

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

Test GAM Matrix WATER
SDG 8604
Contact Joseph Verville

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137	
Preparation batch 7726-046							
S204013-01			8604-001	OUTFALL 019 (440-7074-1)		U	
S204013-02			8604-002	TRIP BLANK (440-7074-3)		U	
S204013-03			8604-003	Lab Control Sample	ok	ok	
S204013-04			8604-004	Method Blank		U	
S204013-05			8604-005	Duplicate (S204013-01)		-	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 7726-046			2σ prep error 7.0 %	Reference Lab Notebook 7724 pg. 119												
S204013-01			OUTFALL 019 (440-7074-1)		2.00					400			6	04/05/12	04/05	MB,G2,0
S204013-02			TRIP BLANK (440-7074-3)		2.00					400			6	04/05/12	04/05	MB,G5,0
S204013-03			Lab Control Sample		2.00					400				04/05/12	04/10	MB,G8,0
S204013-04			Method Blank		2.00					400				04/05/12	04/05	MB,G4,0
S204013-05			Duplicate (S204013-01)		2.00					400			7	04/05/12	04/06	MB,G1,0
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 04/25/12

EBERLINE ANALYTICAL

SDG 8604

LAB METHOD SUMMARY

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY

Test U T Matrix WATER
SDG 8604
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Uranium, Total
Preparation batch 7726-046					
S204013-01		A1	8604-001	OUTFALL 019 (440-7074-1)	0.034 J
S204013-02		A1	8604-002	TRIP BLANK (440-7074-3)	U
S204013-06			8604-006	Lab Control Sample	ok
S204013-07			8604-007	Method Blank	U
S204013-08			8604-008	Duplicate (S204013-01)	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 7726-046			2σ prep error		Reference Lab Notebook 7724 pg. 119											
S204013-01		A1	OUTFALL 019 (440-7074-1)	0.021	0.0200								18	04/17/12	04/17	KPA-001
S204013-02		A1	TRIP BLANK (440-7074-3)	0.021	0.0200								18	04/17/12	04/17	KPA-001
S204013-06			Lab Control Sample	0.209	0.0200									04/17/12	04/17	KPA-001
S204013-07			Method Blank	0.021	0.0200									04/17/12	04/17	KPA-001
S204013-08			Duplicate (S204013-01)	0.021	0.0200								18	04/17/12	04/17	KPA-001
Nominal values and limits from method				1.00	0.0200								180			

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.059 ± 0.168
YIELD ____ ± ____

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H Matrix WATER
SDG 8604
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7726-046						
S204013-01			8604-001	OUTFALL 019 (440-7074-1)	U	
S204013-03			8604-003	Lab Control Sample	ok	J
S204013-04			8604-004	Method Blank	U	
S204013-05			8604-005	Duplicate (S204013-01)	-	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 7726-046			2σ prep error 10.0 %	Reference Lab Notebook 7724 pg. 119												
S204013-01			OUTFALL 019 (440-7074-1)	173	0.0100			100		150			15	04/13/12	04/14	LSC-006
S204013-03			Lab Control Sample	28.7	0.605			10		150				04/13/12	04/14	LSC-006
S204013-04			Method Blank	29.1	0.605			10		150				04/13/12	04/14	LSC-006
S204013-05			Duplicate (S204013-01)	173	0.0100			100		150			15	04/13/12	04/14	LSC-006
Nominal values and limits from method				500	0.605					100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 101 ± 166
YIELD 55 ± 104

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/25/12

EBERLINE ANALYTICAL

SDG 8604

LAB METHOD SUMMARY

RADIUM-226 IN WATER

RADON COUNTING

Test RA Matrix WATER
SDG 8604
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Radium-226	
Preparation batch 7726-046						
S204013-01			8604-001	OUTFALL 019 (440-7074-1)	U	
S204013-02			8604-002	TRIP BLANK (440-7074-3)	U	
S204013-03			8604-003	Lab Control Sample	ok	
S204013-04			8604-004	Method Blank	U	
S204013-05			8604-005	Duplicate (S204013-01)	-	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 7726-046			2σ prep error 16.4 %	Reference Lab Notebook 7724 pg. 119												
S204013-01			OUTFALL 019 (440-7074-1)	0.656	0.100			100		154			12	04/11/12	04/11	RN-015
S204013-02			TRIP BLANK (440-7074-3)	0.598	0.100			100		154			12	04/11/12	04/11	RN-012
S204013-03			Lab Control Sample	0.602	0.100			100		154				04/11/12	04/11	RN-010
S204013-04			Method Blank	0.609	0.100			100		154				04/11/12	04/11	RN-013
S204013-05			Duplicate (S204013-01)	0.700	0.100			100		154			12	04/11/12	04/11	RN-016
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 0.633 ± 0.088
YIELD 100 ± 0

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/25/12

SDG 8604
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

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.

SDG 8604
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

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.

SDG 8604
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

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.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/25/12

SDG 8604
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

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.

SDG 8604
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GUIDE, cont.

Client Test America, Inc.
Contract 44002624

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

SDG 8604
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GUIDE, cont.

Client Test America, Inc.
Contract 44002624

DATA SHEET

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

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

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

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REPORT GUIDE

Client Test America, Inc.
Contract 44002624

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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REPORT GUIDE

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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

SDG 8604
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

DUPLICATE

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

* The RPD is underlined if it is greater than either limit.

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

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

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

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Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/25/12

SDG 8604
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

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
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Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

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.

SDG 8604
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REPORT GUIDE

Client Test America, Inc.
Contract 44002624

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
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SDG 8604
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GUIDE, cont.

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Contract 44002624

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

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/25/12

METHOD SUMMARY

specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

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

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

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

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

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

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GUIDE, cont.

Client Test America, Inc.
Contract 44002624

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.

TestAmerica Irvine
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Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

8604

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Wilson, Debby	Carrier Tracking No(s):	COC No: 440-3397.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: debby.wilson@testamericainc.com		Page: Page 1 of 1
Company: Eberline Services				Job #: 440-6927-1

Address: 2030 Wright Avenue,	Due Date Requested: 4/2/2012
City: Richmond	TAT Requested (days):
State, Zip: CA, 94804	
Phone:	PO #:
Email:	WO #:
Project Name: Boeing SSFL outfalls	Project #: 44002624
Site: Boeing SSFL	SSOW#:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT/ Gross Alpha	SUBCONTRACT/ Gross Beta	SUBCONTRACT/ Radium Combined	SUBCONTRACT/ Strontium 90	SUBCONTRACT/ Tritium	SUBCONTRACT/ Uranium, Combined	SUBCONTRACT/ Gamma Spec K-40 CS-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall 019 Composite (440-7074-1)	3/30/12	10:00 Pacific		Water			X	X	X	X	X	X	X	2	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4/2/12 17:00	TAI	FedEx	4/2/12 17:00	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

4/27/2012

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Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Wilson, Debby	Carrier Tracking No(s):	COC No: 440-3397.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: debby.wilson@testamericainc.com		Page: Page 1 of 1
Company: Eberline Services				Job #: 440-7074-1

Address: 2030 Wright Avenue,	Due Date Requested: 4/6/2012
City: Richmond	TAT Requested (days):
State, Zip: CA, 94804	
Phone:	PO #:
Email:	WO #:
Project Name: Boeing SSFL outfalls	Project #: 44002624
Site: Boeing SSFL	SSOW#:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT/ Gross Alpha	SUBCONTRACT/ Gross Beta	SUBCONTRACT/ Radium Combined	SUBCONTRACT/ Strontium 90	SUBCONTRACT/ Tritium	SUBCONTRACT/ Uranium, Combined	SUBCONTRACT/ Gamma Spec K-40 CS-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall 019 Composite - TB Eberline (440-7074-3)	3/30/12	10:00 Pacific		Water			X	X	X	X	X	X	X	1	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Vu Bank	4/2/12 17:00	TAI	FedEx	4/2/12 17:00	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

4/27/2012

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received 4/3/12 10:00 CoC No. 440-3397.1

Container I.D. No. ice chest Requested TAT (Days) STAND P.O. Received Yes [ ] No [ ]

INSPECTION

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

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by MK Date: 4/3/12 Time: 13:15

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
ALL Samples <80							

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 6 Dec 2011

Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"

Test America Version 7/19/2010

CHAIN OF CUSTODY FORM

440-6927

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Monthly Outfall 019** **GRAB**
Project Manager: Bronwyn Kelly Sampler: Rick Banuelos	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	VOCs (624) + cis-1,2-DCE	Oil & Grease (1664-HEM)	Settleable Solids											Comments
Outfall 019	W	VOAs	5	3-29-2012 09:30	HCl	1A, 1B, 1C, 1D, 1E	X													
Outfall 019	W	1L Amber	2	↓	HCl	2A, 2B		X												
Outfall 019	W	1L Poly	1		None	3			X											
Trip Blanks	W	VOAs	3	3-29-2012 09:30	HCl	4A, 4B, 4C	X													

ANALYSIS REQUIRED

Field readings:
(Log in and include in report Temp and pH)
Temp °F = 53.0
pH = 7.1
DO = 4.89 mG/L
Time of readings = 09:30

These Samples are the Grab Portion of Outfall 019 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:
Rick Banuelos	3-29-2012 11:40	Matt Quan	3-29-12 11:40
Matt Quan	3-29-12 14:40		
		Olga Ornelas	3/29/12 11:40

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

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

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

3.2 C

CHAIN OF CUSTODY FORM

440-7074

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Monthly Outfall 019** **COMPOSITE**
Project Manager: Bronwyn Kelly Sampler: Rick BANTAGA	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: Cu, Pb, Hg, Cd, Se, Zn	TCDD (and all congeners)	BOD_5 (20 degrees C)	Surfactants (MBAS)	Cl, SO_4, NO_3+NO_2-N, Perchlorate	Nitrate-N, Nitrite-N	Turbidity, TDS, TSS	Ammonia-N (350.2)	Alpha BHC (608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs 625)					Comments
							ANALYSIS REQUIRED														
Outfall 019	W	1L Poly	1	3-30-2012 10:00	HNO_3	5A	X														
Outfall 019 Dup	W	1L Poly	1		HNO_3	5B	X														
Outfall 019	W	1L Amber	2		None	6A, 6B		X													
Outfall 019	W	1L Poly	1		None	7			X												
Outfall 019	W	500 mL Poly	2		None	8A, 8B				X											
Outfall 019	W	500 mL Poly	2		None	9A, 9B					X										
Outfall 019	W	500 mL Poly	1		None	10						X									
Outfall 019	W	500 mL Poly	2		None	11A, 11B							X								
Outfall 019	W	500 mL Poly	1		H_2SO_4	12								X							
Outfall 019	W	1L Amber	2		None	13A, 13B									X						
Outfall 019	W	1L Amber	2	3-30-2012 10:00	None	14A, 14B										X					

COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 019 for this storm event.

These must be added to the same work order for COC Page 1 of 3 for Outfall 019 for the same event.

Relinquished By	Date/Time:	Received By	Date/Time:
Rick Bantaga	3-30-2012 13:15	Matt Cmuk	3-30-12 15:15
Matt Cmuk	3-30-12 15:40		1540 3-30-12

Turn-around time: (Check)

24 Hour: _____ 72 Hour: _____ 10 Day: _____ ASAP ✓

48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)

Intact: _____ On Ice: _____

Data Requirements: (Check)

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

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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 **Monthly Outfall 019** **COMPOSITE**
Project Manager: Bronwyn Kelly Sampler: Rick BANAGA	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Dissolved Metals: Cu, Pb, Hg, Cd, Se, Zn	Total Organic Carbon	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 019	W	1L Poly	1	3-30-2012 10:00	None	15	X					Filter w/in 24hrs of receipt at lab
Outfall 019	W	250 mL Glass	1	↓	HCl	16		X				
Outfall 019	W	2.5 Gal Cube	1	3-30-2012 10:00	None	17A			X			Unfiltered and unpreserved analysis
		500 mL Amber	1		None	17B						
~~Outfall 019~~	~~W~~	~~1 Gal Cube~~	~~1~~		~~None~~	~~18~~				X		~~Only test on 1st and 2nd rain events of the year~~
Outfall 019	W	500 mL Poly	1	3-30-2012 10:00	NaOH	19					X	

COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 019 for this storm event.

These must be added to the same work order for COC Page 1 of 3 for Outfall 019 for the same event.

Relinquished By	Date/Time:	Received By	Date/Time:
[signature]	3-30-2012 13:15	[signature]	3-30-12 13:15
[signature]	3-30-12 15:46	[signature]	1540 3-30-12

Turn-around time: (Check)
24 Hour: ___ 72 Hour: ___ 10 Day: ___ ASAP ↙
48 Hour: ___ 5 Day: ___ Normal: ___

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

Data Requirements: (Check)
No Level IV: _ All Level IV: __ NPDES Level IV: ___

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-6927-1

Login Number: 6927

List Number: 1

Creator: Robb, Kathleen

List Source: TestAmerica Irvine

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

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-6927-1

Login Number: 7074

List Source: TestAmerica Irvine

List Number: 1

Creator: Robb, Kathleen

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

APPENDIX G

Section 12

Arroyo Simi-Frontier Park – February 23, 2012

MECX Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-3619-1

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:	440-3619-1
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
Arroyo Simi-FP	440-3619-1	N/A	Water	2/23/2012 11:30:00 AM	SM 4500

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

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

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks
Date Reviewed: April 9, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), EPA Methods 7196A and 9045*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, 28 days from collection, was met.

- Calibration: Calibration criteria were met. The r^2 value was $\geq$0.995 and the initial calibration verification standard recovery was within 90-110%.

- Blanks: The method blank had no detect.

- Blank Spikes and Laboratory Control Samples: The recovery was within laboratory-established QC limits.

- Laboratory Duplicates: No laboratory duplicate analysis was performed.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG. Recoveries and the RPD were within laboratory-established QC limits.

- Sample Result Verification: Calculations were verified and the sample result reported on the sample result summary was verified against the raw data. No transcription errors or calculation errors were noted. 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 440-3619-1

Analysis Method *SM 4500 NH3 D*

Sample Name Arroyo Simi-FP **Matrix Type:** Solid **Validation Level:** IV

Lab Sample Name: 440-3619-1 **Sample Date:** 2/23/2012 11:30:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Ammonia (as N)	7664-41-7	2.92	9.95	1.99	mg/Kg	J,DX	J	DNQ

APPENDIX G

Section 13

Arroyo Simi-Frontier Park – February 23, 2012

Test America Analytical Laboratory Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-3619-1
Client Project/Site: Boeing SSFL

For:
MWH Americas Inc
618 Michillinda Avenue, Suite 200
Arcadia, California 91007

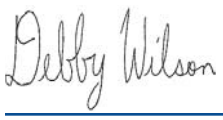
Attn: Bronwyn Kelly

Debby Wilson

Authorized for release by:
3/25/2012 10:56:04 AM

Debby Wilson
Project Manager I
debby.wilson@testamericainc.com

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



Debby Wilson
Project Manager I
3/25/2012 10:56:04 AM

Table of Contents

Sample Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL

TestAmerica Job ID: 440-3619-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-3619-1	Arroyo Simi-FP	Solid	02/23/12 11:30	02/23/12 15:05

Job ID: 440-3619-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-3619-1

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

GC Semi VOA
No analytical or quality issues were noted.

General Chemistry
TOC batches 9920 and 9921 were analyzed in the same analytical sequence. Therefore, sample 3619 is in batch 9921 and the 9920.

Subcontract non-Sister
No analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

Client: MWH Americas Inc
Project/Site: Boeing SSFL

TestAmerica Job ID: 440-3619-1

Client Sample ID: Arroyo Simi-FP

Date Collected: 02/23/12 11:30
Date Received: 02/23/12 15:05

Lab Sample ID: 440-3619-1

Matrix: Solid

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		9.9	3.0	ug/Kg		02/29/12 06:59	03/01/12 00:33	1
4,4'-DDE	ND		9.9	3.0	ug/Kg		02/29/12 06:59	03/01/12 00:33	1
4,4'-DDT	ND		9.9	3.0	ug/Kg		02/29/12 06:59	03/01/12 00:33	1
Chlordane (technical)	ND		99	20	ug/Kg		02/29/12 06:59	03/01/12 00:33	1
Dieldrin	ND		9.9	3.0	ug/Kg		02/29/12 06:59	03/01/12 00:33	1
Toxaphene	ND		400	99	ug/Kg		02/29/12 06:59	03/01/12 00:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*67*		*35 - 115*	*02/29/12 06:59*	*03/01/12 00:33*	*1*
DCB Decachlorobiphenyl (Surr)	*86*		*45 - 120*	*02/29/12 06:59*	*03/01/12 00:33*	*1*

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		99	24	ug/Kg		02/29/12 06:59	03/02/12 01:38	1
Aroclor 1221	ND		99	24	ug/Kg		02/29/12 06:59	03/02/12 01:38	1
Aroclor 1232	ND		99	24	ug/Kg		02/29/12 06:59	03/02/12 01:38	1
Aroclor 1242	ND		99	24	ug/Kg		02/29/12 06:59	03/02/12 01:38	1
Aroclor 1248	ND		99	24	ug/Kg		02/29/12 06:59	03/02/12 01:38	1
Aroclor 1254	ND		99	24	ug/Kg		02/29/12 06:59	03/02/12 01:38	1
Aroclor 1260	ND		99	24	ug/Kg		02/29/12 06:59	03/02/12 01:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*77*		*45 - 120*	*02/29/12 06:59*	*03/02/12 01:38*	*1*

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**21**				%			02/28/12 23:36	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		5000	1700	mg/Kg			02/28/12 09:18	0.996
Ammonia (as N)	**2.92**	**J,DX**	9.95	1.99	mg/Kg		02/27/12 20:18	02/28/12 17:04	1

Client: MWH Americas Inc
Project/Site: Boeing SSFL

TestAmerica Job ID: 440-3619-1

Client Sample ID: Arroyo Simi-FP

Lab Sample ID: 440-3619-1

Date Collected: 02/23/12 11:30

Matrix: Solid

Date Received: 02/23/12 15:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			7.55 g	2 mL	10146	02/29/12 06:59	NF	TAL IRV
Total/NA	Analysis	8081A		1			10221	03/01/12 00:33	CN	TAL IRV
Total/NA	Analysis	8082		1			10603	03/02/12 01:38	CN	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			5.0249 g	100 mL	9838	02/27/12 20:18	NP	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1			10044	02/28/12 17:04	NP	TAL IRV
Total/NA	Analysis	Moisture		1			10121	02/28/12 23:36	DK	TAL IRV
Total/NA	Analysis	9060		0.996	0.1004 g	0.1004 g	9921	02/28/12 09:18	FZ	TAL IRV

Laboratory References:

ABC = Aquatic Bioassay - Ventura, CA, 29 North Olive Street, Ventura, CA 93001

PTSL = PTS Laboratories, Inc, 8100 Secura Way, Santa Fe Springs, CA 90670

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

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 440-10146/1-A
Matrix: Solid
Analysis Batch: 10221

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 10146

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		5.0	1.5	ug/Kg		02/29/12 06:59	02/29/12 15:12	1
4,4'-DDE	ND		5.0	1.5	ug/Kg		02/29/12 06:59	02/29/12 15:12	1
4,4'-DDT	ND		5.0	1.5	ug/Kg		02/29/12 06:59	02/29/12 15:12	1
Chlordane (technical)	ND		50	10	ug/Kg		02/29/12 06:59	02/29/12 15:12	1
Dieldrin	ND		5.0	1.5	ug/Kg		02/29/12 06:59	02/29/12 15:12	1
Toxaphene	ND		200	50	ug/Kg		02/29/12 06:59	02/29/12 15:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*78*		*35 - 115*	*02/29/12 06:59*	*02/29/12 15:12*	*1*
DCB Decachlorobiphenyl (Surr)	*93*		*45 - 120*	*02/29/12 06:59*	*02/29/12 15:12*	*1*

Lab Sample ID: LCS 440-10146/2-A
Matrix: Solid
Analysis Batch: 10221

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 10146

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	33.3	33.0		ug/Kg		99	60 - 120
4,4'-DDE	33.3	32.0		ug/Kg		96	60 - 120
4,4'-DDT	33.3	31.0		ug/Kg		93	65 - 120
alpha-Chlordane	33.3	30.4		ug/Kg		91	50 - 115
gamma-Chlordane	33.3	31.4		ug/Kg		94	50 - 115
Dieldrin	33.3	31.1		ug/Kg		93	65 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*83*		*35 - 115*
DCB Decachlorobiphenyl (Surr)	*93*		*45 - 120*

Lab Sample ID: 440-3918-A-1-A MS
Matrix: Solid
Analysis Batch: 10221

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 10146

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	ND		33.3	26.3		ug/Kg		79	40 - 130
4,4'-DDE	ND		33.3	25.8		ug/Kg		77	35 - 130
4,4'-DDT	ND		33.3	28.1		ug/Kg		84	35 - 130
alpha-Chlordane	ND		33.3	24.7		ug/Kg		74	50 - 115
gamma-Chlordane	ND		33.3	25.5		ug/Kg		77	50 - 115
Dieldrin	ND		33.3	25.1		ug/Kg		75	40 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Tetrachloro-m-xylene	*69*		*35 - 115*
DCB Decachlorobiphenyl (Surr)	*69*		*45 - 120*

Lab Sample ID: 440-3918-A-1-B MSD
Matrix: Solid
Analysis Batch: 10221

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 10146

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4,4'-DDD	ND		33.3	27.6		ug/Kg		83	40 - 130	5	30

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 440-3918-A-1-B MSD
Matrix: Solid
Analysis Batch: 10221

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 10146

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4,4'-DDE	ND		33.3	27.3		ug/Kg		82	35 - 130	6	30
4,4'-DDT	ND		33.3	29.6		ug/Kg		89	35 - 130	5	30
alpha-Chlordane	ND		33.3	26.2		ug/Kg		78	50 - 115	6	30
gamma-Chlordane	ND		33.3	27.1		ug/Kg		81	50 - 115	6	30
Dieldrin	ND		33.3	26.7		ug/Kg		80	40 - 125	6	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*74*		*35 - 115*
DCB Decachlorobiphenyl (Surr)	*73*		*45 - 120*

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 440-10146/1-A
Matrix: Solid
Analysis Batch: 10603

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 10146

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		50	12	ug/Kg		02/29/12 06:59	03/01/12 21:42	1
Aroclor 1221	ND		50	12	ug/Kg		02/29/12 06:59	03/01/12 21:42	1
Aroclor 1232	ND		50	12	ug/Kg		02/29/12 06:59	03/01/12 21:42	1
Aroclor 1242	ND		50	12	ug/Kg		02/29/12 06:59	03/01/12 21:42	1
Aroclor 1248	ND		50	12	ug/Kg		02/29/12 06:59	03/01/12 21:42	1
Aroclor 1254	ND		50	12	ug/Kg		02/29/12 06:59	03/01/12 21:42	1
Aroclor 1260	ND		50	12	ug/Kg		02/29/12 06:59	03/01/12 21:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*97*		*45 - 120*	*02/29/12 06:59*	*03/01/12 21:42*	*1*

Lab Sample ID: LCS 440-10146/3-A
Matrix: Solid
Analysis Batch: 10603

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 10146

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	266	256		ug/Kg		96	65 - 115
Aroclor 1260	266	262		ug/Kg		98	65 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*92*		*45 - 120*

Lab Sample ID: 440-3918-A-1-C MS
Matrix: Solid
Analysis Batch: 10603

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 10146

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	ND		267	219		ug/Kg		82	50 - 120
Aroclor 1260	ND		267	228		ug/Kg		86	50 - 125

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 440-3918-A-1-C MS
Matrix: Solid
Analysis Batch: 10603

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 10146

Surrogate	MS %Recovery	MS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	76		45 - 120

Lab Sample ID: 440-3918-A-1-D MSD
Matrix: Solid
Analysis Batch: 10603

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 10146

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	ND		267	217		ug/Kg		81	50 - 120	1	30
Aroclor 1260	ND		267	227		ug/Kg		85	50 - 125	1	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	77		45 - 120

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 440-9920/5
Matrix: Solid
Analysis Batch: 9920

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		5000	1700	mg/Kg			02/28/12 06:46	1

Lab Sample ID: LCS 440-9920/6
Matrix: Solid
Analysis Batch: 9920

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10000	10400		mg/Kg		104	90 - 110

Lab Sample ID: 440-3294-A-3 MS
Matrix: Solid
Analysis Batch: 9920

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	1800	J,DX	20000	20900		mg/Kg		96	70 - 130

Lab Sample ID: 440-3294-A-3 MSD
Matrix: Solid
Analysis Batch: 9920

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	1800	J,DX	19900	21200		mg/Kg		98	70 - 130	1	30

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-9838/1-A
Matrix: Solid
Analysis Batch: 10044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 9838

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		10.0	2.00	mg/Kg		02/27/12 20:18	02/28/12 17:04	1

Lab Sample ID: LCS 440-9838/2-A
Matrix: Solid
Analysis Batch: 10044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 9838

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia (as N)			50.0	51.56		mg/Kg		103	85 - 115		

Lab Sample ID: 440-3619-1 MS
Matrix: Solid
Analysis Batch: 10044

Client Sample ID: Arroyo Simi-FP
Prep Type: Total/NA
Prep Batch: 9838

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ammonia (as N)	2.92	J,DX	49.7	45.45		mg/Kg		85	75 - 125		

GC Semi VOA

Prep Batch: 10146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-3619-1	Arroyo Simi-FP	Total/NA	Solid	3546	
440-3918-A-1-A MS	Matrix Spike	Total/NA	Solid	3546	
440-3918-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3546	
440-3918-A-1-C MS	Matrix Spike	Total/NA	Solid	3546	
440-3918-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	3546	
LCS 440-10146/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 440-10146/3-A	Lab Control Sample	Total/NA	Solid	3546	
MB 440-10146/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 10221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-3619-1	Arroyo Simi-FP	Total/NA	Solid	8081A	10146
440-3918-A-1-A MS	Matrix Spike	Total/NA	Solid	8081A	10146
440-3918-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8081A	10146
LCS 440-10146/2-A	Lab Control Sample	Total/NA	Solid	8081A	10146
MB 440-10146/1-A	Method Blank	Total/NA	Solid	8081A	10146

Analysis Batch: 10603

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-3619-1	Arroyo Simi-FP	Total/NA	Solid	8082	10146
440-3918-A-1-C MS	Matrix Spike	Total/NA	Solid	8082	10146
440-3918-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8082	10146
LCS 440-10146/3-A	Lab Control Sample	Total/NA	Solid	8082	10146
MB 440-10146/1-A	Method Blank	Total/NA	Solid	8082	10146

General Chemistry

Prep Batch: 9838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-3619-1	Arroyo Simi-FP	Total/NA	Solid	SM 4500 NH3 B	
440-3619-1 MS	Arroyo Simi-FP	Total/NA	Solid	SM 4500 NH3 B	
440-3619-1 MSD	Arroyo Simi-FP	Total/NA	Solid	SM 4500 NH3 B	
LCS 440-9838/2-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 B	
MB 440-9838/1-A	Method Blank	Total/NA	Solid	SM 4500 NH3 B	

Analysis Batch: 9920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-3294-A-3 MS	Matrix Spike	Total/NA	Solid	9060	
440-3294-A-3 MSD	Matrix Spike Duplicate	Total/NA	Solid	9060	
LCS 440-9920/6	Lab Control Sample	Total/NA	Solid	9060	
MB 440-9920/5	Method Blank	Total/NA	Solid	9060	

Analysis Batch: 9921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-3619-1	Arroyo Simi-FP	Total/NA	Solid	9060	

Analysis Batch: 10044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-3619-1	Arroyo Simi-FP	Total/NA	Solid	SM 4500 NH3 D	9838
440-3619-1 MS	Arroyo Simi-FP	Total/NA	Solid	SM 4500 NH3 D	9838
440-3619-1 MSD	Arroyo Simi-FP	Total/NA	Solid	SM 4500 NH3 D	9838
LCS 440-9838/2-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 D	9838

General Chemistry (Continued)

Analysis Batch: 10044 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-9838/1-A	Method Blank	Total/NA	Solid	SM 4500 NH3 D	9838

Analysis Batch: 10121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-3619-1	Arroyo Simi-FP	Total/NA	Solid	Moisture	
440-3702-A-1 MS	Matrix Spike	Total/NA	Solid	Moisture	

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL

TestAmerica Job ID: 440-3619-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Irvine	Arizona	State Program	9	AZ0671
TestAmerica Irvine	California	LA Cty Sanitation Districts	9	10256
TestAmerica Irvine	California	NELAC	9	1108CA
TestAmerica Irvine	California	State Program	9	2706
TestAmerica Irvine	Guam	State Program	9	Cert. No. 10.001r
TestAmerica Irvine	Hawaii	State Program	9	N/A
TestAmerica Irvine	Nevada	State Program	9	CA015312007A
TestAmerica Irvine	New Mexico	State Program	6	N/A
TestAmerica Irvine	Northern Mariana Islands	State Program	9	MP0002
TestAmerica Irvine	Oregon	NELAC	10	4005
TestAmerica Irvine	USDA	Federal		P330-09-00080

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

aquatic bioassay & consulting laboratories, inc

March 23rd, 2012

Debby Wilson
TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Dear Ms. Wilson:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136.* Results were as follows:

CLIENT:	TestAmerica
SAMPLE I.D.:	Arroyo Simi-FP
DATE RECEIVED:	2/23/2012
ABC LAB. NO.:	TAM0212.268

CHRONIC MYTILUS DEVELOPMENT BIOASSAY

NOEC	=	100.00 %
TUc	=	1.00
IC25	=	>100.00 %
IC50	=	>100.00 %

Yours very truly,

Michael Machuzak
Laboratory Director

CETIS Summary Report

Report Date: 23 Mar-12 09:46 (p 1 of 1)
Test Code: 17-3971-7447/TAM0212.268m

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	14-2546-2278	Test Type:	Development-Survival	Analyst:	
Start Date:	08 Mar-12 13:00	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Water
Ending Date:	10 Mar-12 15:00	Species:	Mytilis galloprovincialis	Brine:	
Duration:	50h	Source:	Carlsbad Aquafarms CA	Age:	
Sample ID:	02-4512-4769	Code:	TAM0212.268m	Client:	Test America
Sample Date:	23 Feb-12 11:30	Material:	Sediment	Project:	Boeing-SSFL NPDES Annual Frontier
Receive Date:	23 Feb-12 15:35	Source:	Bioassay Report		
Sample Age:	14d 2h	Station:	Arroyo Simi-FP		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
09-7952-2989	Combined Proportion Norm	100	>100	N/A	8.08%	1	Equal Variance t Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
11-1028-0347	Combined Proportion Norm	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
09-7952-2989	Combined Proportion Norm	PMSD	0.08084	NL - 0.25	No	Result Within Limits

Combined Proportion Normal Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Control	5	0.8351	0.808	0.8622	0.7297	0.9189	0.01325	0.07255	8.69%	0.0%
100		5	0.8595	0.8465	0.8724	0.8176	0.8986	0.006314	0.03459	4.02%	-2.91%

Combined Proportion Normal Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.8176	0.8851	0.7297	0.8243	0.9189
100		0.8311	0.8851	0.8649	0.8986	0.8176

CETIS Analytical Report

Report Date: 23 Mar-12 09:46 (p 1 of 2)
Test Code: 17-3971-7447/TAM0212.268m

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	09-7952-2989	Endpoint:	Combined Proportion Normal	CETIS Version:	CETISv1.7.0
Analyzed:	23 Mar-12 9:46	Analysis:	Parametric-Two Sample	Official Results:	Yes
Batch ID:	14-2546-2278	Test Type:	Development-Survival	Analyst:	
Start Date:	08 Mar-12 13:00	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Water
Ending Date:	10 Mar-12 15:00	Species:	Mytilis galloprovincialis	Brine:	
Duration:	50h	Source:	Carlsbad Aquafarms CA	Age:	
Sample ID:	02-4512-4769	Code:	TAM0212.268m	Client:	Test America
Sample Date:	23 Feb-12 11:30	Material:	Sediment	Project:	Boeing-SSFL NPDES Annual Frontier
Receive Date:	23 Feb-12 15:35	Source:	Bioassay Report		
Sample Age:	14d 2h	Station:	Arroyo Simi-FP		

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	0	C > T	Not Run	100	>100	N/A	1	8.08%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Negative Control		100	-0.582	1.86	0.092	0.7117	Non-Significant Effect

Test Acceptability

Attribute	Test Stat	TAC Limits	Overlap	Decision
PMSD	0.08084	NL - 0.25	No	Result Within Limits

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision
Extreme Value	Grubbs Single Outlier	1.84	2.29	0.4338	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.002072543	0.002072543	1	0.3387	0.5766	Non-Significant Effect
Error	0.04895023	0.006118778	8			
Total	0.05102277	0.008191321	9			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Variance Ratio F	3.919	23.15	0.2144	Equal Variances
Variances	Mod Levene Equality of Variance	1.764	13.75	0.2324	Equal Variances
Distribution	Shapiro-Wilk Normality	0.9845		0.9847	Normal Distribution
Distribution	Kolmogorov-Smirnov	0.1146	0.3025	1.0000	Normal Distribution
Distribution	D'Agostino Skewness	0.2417	2.576	0.8090	Normal Distribution

Combined Proportion Normal Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Control	5	0.8351	0.8075	0.8627	0.7297	0.9189	0.01347	0.07255	8.69%	0.0%
100		5	0.8595	0.8463	0.8726	0.8176	0.8986	0.006422	0.03458	4.02%	-2.91%

Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Contr	5	1.16	1.122	1.197	1.024	1.282	0.01834	0.09874	8.51%	0.0%
100		5	1.189	1.17	1.208	1.129	1.247	0.009262	0.04988	4.2%	-2.48%

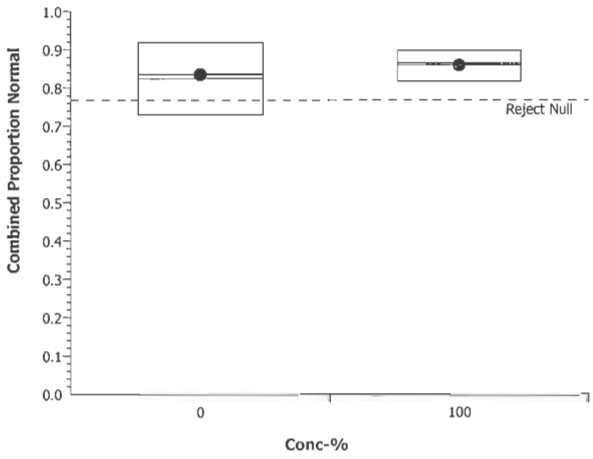
Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

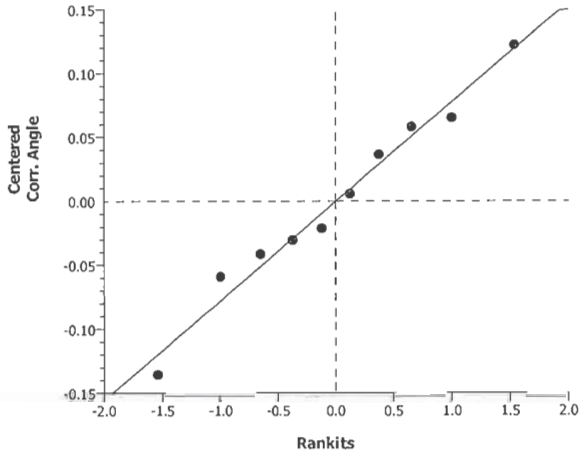
Analysis ID:	09-7952-2989	Endpoint:	Combined Proportion Normal	CETIS Version:	CETISv1.7.0
Analyzed:	23 Mar-12 9:46	Analysis:	Parametric-Two Sample	Official Results:	Yes

Combined Proportion Normal Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.8176	0.8851	0.7297	0.8243	0.9189
100		0.8311	0.8851	0.8649	0.8986	0.8176

Graphics





CETIS Analytical Report

Report Date: 23 Mar-12 09:46 (p 1 of 1)
Test Code: 17-3971-7447/TAM0212.268m

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	11-1028-0347	Endpoint:	Combined Proportion Normal	CETIS Version:	CETISv1.7.0
Analyzed:	23 Mar-12 9:46	Analysis:	Linear Interpolation (ICPIN)	Official Results:	Yes
Batch ID:	14-2546-2278	Test Type:	Development-Survival	Analyst:	
Start Date:	08 Mar-12 13:00	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Water
Ending Date:	10 Mar-12 15:00	Species:	Mytilis galloprovincialis	Brine:	
Duration:	50h	Source:	Carlsbad Aquafarms CA	Age:	
Sample ID:	02-4512-4769	Code:	TAM0212.268m	Client:	Test America
Sample Date:	23 Feb-12 11:30	Material:	Sediment	Project:	Boeing-SSFL NPDES Annual Frontier
Receive Date:	23 Feb-12 15:35	Source:	Bioassay Report		
Sample Age:	14d 2h	Station:	Arroyo Simi-FP		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	5334240	280	Yes	Two-Point Interpolation

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Extreme Value	Grubbs Extreme Value	1.84	2.29	0.4338	No Outliers Detected

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	N/A	N/A
EC10	>100	N/A	N/A	<1	N/A	N/A
EC15	>100	N/A	N/A	<1	N/A	N/A
EC20	>100	N/A	N/A	<1	N/A	N/A
EC25	>100	N/A	N/A	<1	N/A	N/A
EC40	>100	N/A	N/A	<1	N/A	N/A
EC50	>100	N/A	N/A	<1	N/A	N/A

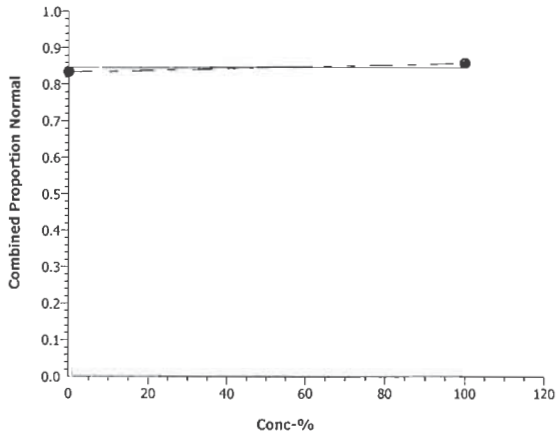
Combined Proportion Normal Summary

			Calculated Variate(A/B)								
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Negative Control	5	0.8351	0.7297	0.9189	0.01325	0.07255	8.69%	0.0%	618	740
100		5	0.8595	0.8176	0.8986	0.006314	0.03458	4.02%	-2.91%	636	740

Combined Proportion Normal Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.8176	0.8851	0.7297	0.8243	0.9189
100		0.8311	0.8851	0.8649	0.8986	0.8176

Graphics



Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	14-2546-2278	Test Type:	Development-Survival	Analyst:	
Start Date:	08 Mar-12 13:00	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Water
Ending Date:	10 Mar-12 15:00	Species:	Mytilis galloprovincialis	Brine:	
Duration:	50h	Source:	Carlsbad Aquafarms CA	Age:	
Sample ID:	02-4512-4769	Code:	TAM0212.268m	Client:	Test America
Sample Date:	23 Feb-12 11:30	Material:	Sediment	Project:	Boeing-SSFL NPDES Annual Frontier
Receive Date:	23 Feb-12 15:35	Source:	Bioassay Report		
Sample Age:	14d 2h	Station:	Arroyo Simi-FP		

Dissolved Oxygen-mg/L

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	6.95	6.878	7.022	6.8	7.1	0.03536	0.2121	3.05%	0
100		2	7.2	7.056	7.344	6.9	7.5	0.07071	0.4243	5.89%	0
Overall		4	7.075			6.8	7.5				0 (0%)

Total Ammonia (N)-mg/L

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	1	0			0	0	0	0		0
100		1	0			0	0	0	0		0
Overall		2	0			0	0				0 (0%)

pH-Units

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.8	7.8	7.8	7.8	7.8	0	0	0.0%	0
100		2	7.7	7.7	7.7	7.7	7.7	0	0	0.0%	0
Overall		4	7.75			7.7	7.8				0 (0%)

Salinity-ppt

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	34	34	34	34	34	0	0	0.0%	0
100		2	34	34	34	34	34	0	0	0.0%	0
Overall		4	34			34	34				0 (0%)

Temperature-°C

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	14.75	14.73	14.77	14.7	14.8	0.01179	0.07075	0.48%	0
100		2	14.75	14.73	14.77	14.7	14.8	0.01179	0.07075	0.48%	0
Overall		4	14.75			14.7	14.8				0 (0%)

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

Conc-%	Control Type	1	2
0	Negative Contr	6.8	7.1
100		6.9	7.5

Total Ammonia (N)-mg/L

Conc-%	Control Type	1
0	Negative Contr	0
100		0

pH-Units

Conc-%	Control Type	1	2
0	Negative Contr	7.8	7.8
100		7.7	7.7

Salinity-ppt

Conc-%	Control Type	1	2
0	Negative Contr	34	34
100		34	34

Temperature-°C

Conc-%	Control Type	1	2
0	Negative Contr	14.8	14.7
100		14.8	14.7

aquatic bioassay & consulting laboratories, inc

March 23rd, 2012

Debby Wilson
TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Dear Ms. Wilson:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136.* Results were as follows:

CLIENT:	TestAmerica
SAMPLE I.D.:	Arroyo Simi-FP
DATE RECEIVED:	2/23/2012
ABC LAB. NO.:	TAM0212.268

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC	=	100.00 %
TUc	=	1.00
IC25	=	>100.00 %
IC50	=	>100.00 %

Yours very truly,

Michael Machuzak
Laboratory Director

CETIS Summary Report

Report Date: 23 Mar-12 09:40 (p 1 of 1)
Test Code: 12-5177-5572/TAM0212.268

Eohaustorius 10-d Survival and Reburial Sediment Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	01-4678-0468	Test Type:	Survival-Reburial	Analyst:	
Start Date:	08 Mar-12 12:00	Protocol:	EPA/600/R-94/025 (1994)	Diluent:	Laboratory Seawater
Ending Date:	18 Mar-12 13:00	Species:	Eohaustorius estuarius	Brine:	Not Applicable
Duration:	10d 1h	Source:	Northwestern Aquatic Science, OR	Age:	
Sample ID:	13-3866-8888	Code:	TAM0212.268	Client:	Test America
Sample Date:	23 Feb-12 11:30	Material:	Sediment	Project:	Boeing-SSFL NPDES Annual Frontier
Receive Date:	23 Feb-12 15:35	Source:	Bioassay Report		
Sample Age:	14d 1h	Station:	Arroyo Simi-FP		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
00-1209-5615	Survival Rate	100	>100	N/A	5.51%	1	Equal Variance t Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
15-5239-9756	Survival Rate	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
00-1209-5615	Survival Rate	Control Resp	0.9	0.9 - NL	Yes	Result Within Limits
15-5239-9756	Survival Rate	Control Resp	0.9	0.9 - NL	Yes	Result Within Limits

Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Control	5	0.9	0.8868	0.9132	0.85	0.95	0.006455	0.03536	3.93%	0.0%
100		5	0.91	0.8944	0.9256	0.85	0.95	0.007638	0.04183	4.6%	-1.11%

Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9	0.95	0.9	0.9	0.85
100		0.95	0.85	0.9	0.95	0.9

CETIS Analytical Report

Report Date: 23 Mar-12 09:40 (p 1 of 2)
Test Code: 12-5177-5572/TAM0212.268

Eohaustorius 10-d Survival and Reburial Sediment Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	00-1209-5615	Endpoint:	Survival Rate	CETIS Version:	CETISv1.7.0
Analyzed:	23 Mar-12 9:40	Analysis:	Parametric-Two Sample	Official Results:	Yes
Batch ID:	01-4678-0468	Test Type:	Survival-Reburial	Analyst:	
Start Date:	08 Mar-12 12:00	Protocol:	EPA/600/R-94/025 (1994)	Diluent:	Laboratory Seawater
Ending Date:	18 Mar-12 13:00	Species:	Eohaustorius estuarius	Brine:	Not Applicable
Duration:	10d 1h	Source:	Northwestern Aquatic Science, OR	Age:	
Sample ID:	13-3866-8888	Code:	TAM0212.268	Client:	Test America
Sample Date:	23 Feb-12 11:30	Material:	Sediment	Project:	Boeing-SSFL NPDES Annual Frontier
Receive Date:	23 Feb-12 15:35	Source:	Bioassay Report		
Sample Age:	14d 1h	Station:	Arroyo Simi-FP		

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	0	C > T	Not Run	100	>100	N/A	1	5.51%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	Test Stat	Critical	MSD	P-Value	Decision(5%)
Negative Control		100	-0.4504	1.86	0.07947	0.6678	Non-Significant Effect

Test Acceptability

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.9	0.9 - NL	Yes	Result Within Limits

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision
Extreme Value	Grubbs Single Outlier	1.558	2.29	1.0000	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	0.0009261589	0.0009261589	1	0.2029	0.6644	Non-Significant Effect
Error	0.03652327	0.004565408	8			
Total	0.03744943	0.005491567	9			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Variance Ratio F	1.443	23.15	0.7308	Equal Variances
Variances	Mod Levene Equality of Variance	0.4999	13.75	0.5061	Equal Variances
Distribution	Shapiro-Wilk Normality	0.9182		0.3426	Normal Distribution
Distribution	Kolmogorov-Smirnov	0.2254	0.3025	0.1678	Normal Distribution
Distribution	D'Agostino Skewness	0.03543	2.576	0.9717	Normal Distribution

Survival Rate Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Control	5	0.9	0.8866	0.9134	0.85	0.95	0.006565	0.03536	3.93%	0.0%
100		5	0.91	0.8941	0.9259	0.85	0.95	0.007768	0.04183	4.6%	-1.11%

Angular (Corrected) Transformed Summary

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Contr	5	1.253	1.23	1.276	1.173	1.345	0.01135	0.06113	4.88%	0.0%
100		5	1.272	1.244	1.3	1.173	1.345	0.01364	0.07344	5.77%	-1.54%

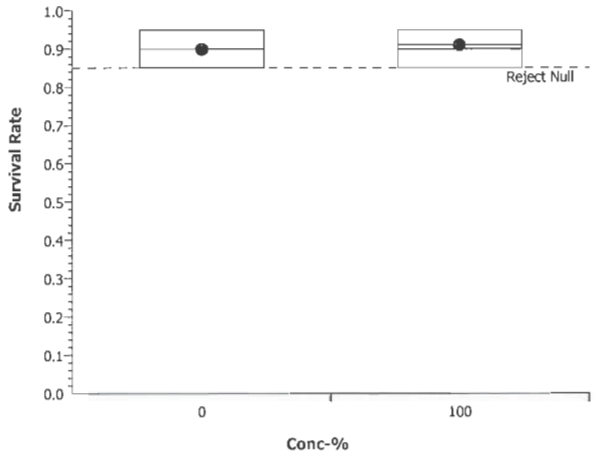
Eohaustorius 10-d Survival and Reburial Sediment Test — Aquatic Bioassay & Consulting Labs, Inc.

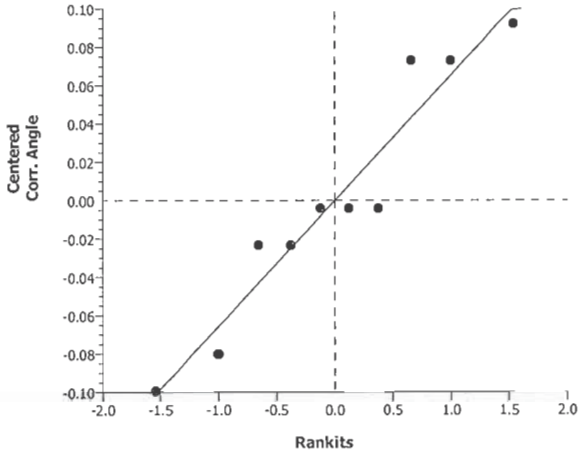
Analysis ID:	00-1209-5615	Endpoint:	Survival Rate	CETIS Version:	CETISv1.7.0
Analyzed:	23 Mar-12 9:40	Analysis:	Parametric-Two Sample	Official Results:	Yes

Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9	0.95	0.9	0.9	0.85
100		0.95	0.85	0.9	0.95	0.9

Graphics





CETIS Analytical Report

Report Date: 23 Mar-12 09:40 (p 1 of 2)
Test Code: 12-5177-5572/TAM0212.268

Eohaustorius 10-d Survival and Reburial Sediment Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	15-5239-9756	Endpoint:	Survival Rate	CETIS Version:	CETISv1.7.0
Analyzed:	23 Mar-12 9:40	Analysis:	Linear Interpolation (ICPIN)	Official Results:	Yes
Batch ID:	01-4678-0468	Test Type:	Survival-Reburial	Analyst:	
Start Date:	08 Mar-12 12:00	Protocol:	EPA/600/R-94/025 (1994)	Diluent:	Laboratory Seawater
Ending Date:	18 Mar-12 13:00	Species:	Eohaustorius estuarius	Brine:	Not Applicable
Duration:	10d 1h	Source:	Northwestern Aquatic Science, OR	Age:	
Sample ID:	13-3866-8888	Code:	TAM0212.268	Client:	Test America
Sample Date:	23 Feb-12 11:30	Material:	Sediment	Project:	Boeing-SSFL NPDES Annual Frontier
Receive Date:	23 Feb-12 15:35	Source:	Bioassay Report		
Sample Age:	14d 1h	Station:	Arroyo Simi-FP		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	7055475	280	Yes	Two-Point Interpolation

Test Acceptability

Attribute	Test Stat	TAC Limits	Overlap	Decision
Control Resp	0.9	0.9 - NL	Yes	Result Within Limits

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Extreme Value	Grubbs Extreme Value	1.558	2.29	1.0000	No Outliers Detected

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	N/A	N/A
EC10	>100	N/A	N/A	<1	N/A	N/A
EC15	>100	N/A	N/A	<1	N/A	N/A
EC20	>100	N/A	N/A	<1	N/A	N/A
EC25	>100	N/A	N/A	<1	N/A	N/A
EC40	>100	N/A	N/A	<1	N/A	N/A
EC50	>100	N/A	N/A	<1	N/A	N/A

Survival Rate Summary

			Calculated Variate(A/B)								
Conc-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Negative Control	5	0.9	0.85	0.95	0.006455	0.03536	3.93%	0.0%	90	100
100		5	0.91	0.85	0.95	0.007638	0.04183	4.6%	-1.11%	91	100

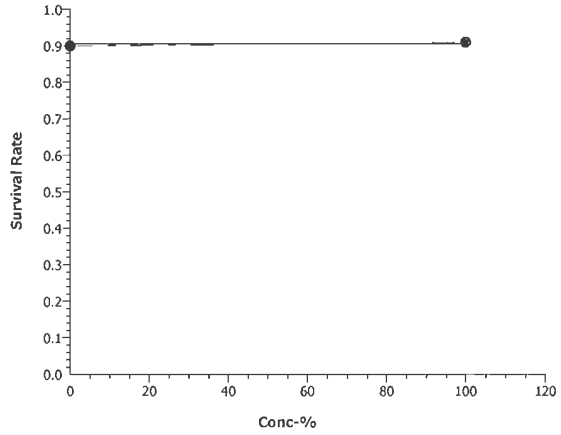
Survival Rate Detail

Conc-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9	0.95	0.9	0.9	0.85
100		0.95	0.85	0.9	0.95	0.9

Eohaustorius 10-d Survival and Reburial Sediment Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	15-5239-9756	**Endpoint:**	Survival Rate	**CETIS Version:**	CETISv1.7.0
Analyzed:	23 Mar-12 9:40	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



Eohaustorius 10-d Survival and Reburial Sediment Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	01-4678-0468	Test Type:	Survival-Reburial	Analyst:	
Start Date:	08 Mar-12 12:00	Protocol:	EPA/600/R-94/025 (1994)	Diluent:	Laboratory Seawater
Ending Date:	18 Mar-12 13:00	Species:	Eohaustorius estuarius	Brine:	Not Applicable
Duration:	10d 1h	Source:	Northwestern Aquatic Science, OR	Age:	
Sample ID:	13-3866-8888	Code:	TAM0212.268	Client:	Test America
Sample Date:	23 Feb-12 11:30	Material:	Sediment	Project:	Boeing-SSFL NPDES Annual Frontier
Receive Date:	23 Feb-12 15:35	Source:	Bioassay Report		
Sample Age:	14d 1h	Station:	Arroyo Simi-FP		

Dissolved Oxygen-mg/L

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	10.05	10.03	10.07	10	10.1	0.01179	0.07073	0.7%	0
100		2	9.95	9.878	10.02	9.8	10.1	0.03536	0.2121	2.13%	0
Overall		4	10			9.8	10.1				0 (0%)

Total Ammonia (N)-mg/L

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	1	0			0	0	0	0		0
100		1	0			0	0	0	0		0
Overall		2	0			0	0				0 (0%)

pH-Units

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.75	7.726	7.774	7.7	7.8	0.01179	0.07072	0.91%	0
100		2	7.9	7.899	7.901	7.9	7.9	0	0	0.0%	0
Overall		4	7.825			7.7	7.9				0 (0%)

Salinity-ppt

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20			20	20				0 (0%)

Temperature-°C

Conc-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	14.8	14.8	14.8	14.8	14.8	0	0	0.0%	0
100		2	14.8	14.8	14.8	14.8	14.8	0	0	0.0%	0
Overall		4	14.8			14.8	14.8				0 (0%)

Eohaustorius 10-d Survival and Reburial Sediment Test — Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

Conc-%	Control Type	1	2
0	Negative Contr	10.1	10
100		9.8	10.1

Total Ammonia (N)-mg/L

Conc-%	Control Type	1
0	Negative Contr	0
100		0

pH-Units

Conc-%	Control Type	1	2
0	Negative Contr	7.8	7.7
100		7.9	7.9

Salinity-ppt

Conc-%	Control Type	1	2
0	Negative Contr	20	20
100		20	20

Temperature-°C

Conc-%	Control Type	1	2
0	Negative Contr	14.8	14.8
100		14.8	14.8

aquatic bioassay & consulting laboratories, inc

CHRONIC MYTILUS SURVIVAL/DEVELOPMENT BIOASSAY

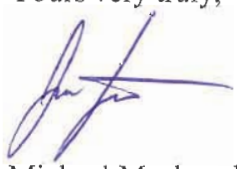
DATE: 3/8/2012

STANDARD TOXICANT: Unionized Ammonia

NOEC = 0.075 mg/l

IC25 = 0.0808 mg/l
IC50 = 0.0942 mg/l

Yours very truly,



Michael Machuzak
Laboratory Director

CETIS Summary Report

Report Date: 23 Mar-12 10:07 (p 1 of 1)
Test Code: 04-0292-3348/MYT030812

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	01-9921-0211	Test Type:	Development-Survival	Analyst:	
Start Date:	08 Mar-12 12:01	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater
Ending Date:	10 Mar-12 13:01	Species:	Mytilis galloprovincialis	Brine:	Not Applicable
Duration:	49h	Source:	Carlsbad Aquafarms CA	Age:	
Sample ID:	06-1047-0553	Code:	MYT030812	Client:	Internal Lab
Sample Date:	08 Mar-12	Material:	Ammonia (Unionized)	Project:	
Receive Date:		Source:	Reference Toxicant		
Sample Age:	12h	Station:			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
07-2364-9447	Combined Proportion Norm	0.05	0.075	0.06124	10.39%		Bonferroni Adj t Test

Point Estimate Summary

Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
15-7595-7517	Combined Proportion Norm	EC5	0.05002	N/A	0.07182		Linear Interpolation (ICPIN)
		EC10	0.06375	0.03155	0.09053		
		EC15	0.07548	0.04466	0.08275		
		EC20	0.07816	0.06037	0.08493		
		EC25	0.08083	0.07109	0.0872		
		EC40	0.08886	0.08134	0.09643		
		EC50	0.09421	0.08544	0.1026		

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
07-2364-9447	Combined Proportion Norm	PMSD	0.1039	NL - 0.25	No	Result Within Limits

Combined Proportion Normal Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Control	5	0.9203	0.9077	0.9328	0.8649	0.9527	0.006131	0.03358	3.65%	0.0%
0.028		3	0.9144	0.8948	0.934	0.8716	0.973	0.009582	0.05248	5.74%	0.64%
0.05		5	0.8743	0.857	0.8917	0.7973	0.9189	0.008484	0.04647	5.32%	4.99%
0.075		5	0.7905	0.7523	0.8288	0.6824	0.9527	0.01869	0.1024	12.95%	14.1%
0.097		5	0.4122	0.3726	0.4518	0.2432	0.5203	0.01937	0.1061	25.74%	55.21%
0.119		5	0.01216	0.008873	0.01545	0	0.02027	0.001608	0.00881	72.44%	98.68%

Combined Proportion Normal Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9257	0.9392	0.9527	0.8649	0.9189
0.028			0.973		0.8986	0.8716
0.05		0.8851	0.7973	0.8716	0.8986	0.9189
0.075		0.9527	0.7297	0.7838	0.8041	0.6824
0.097		0.5203	0.2432	0.4797	0.3986	0.4189
0.119		0.02027	0.006757	0.01351	0.02027	0

CETIS Analytical Report

Report Date: 23 Mar-12 10:07 (p 1 of 2)
Test Code: 04-0292-3348/MYT030812

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-2364-9447	Endpoint:	Combined Proportion Normal	CETIS Version:	CETISv1.7.0
Analyzed:	23 Mar-12 10:07	Analysis:	Parametric-Multiple Comparison	Official Results:	Yes
Batch ID:	01-9921-0211	Test Type:	Development-Survival	Analyst:	
Start Date:	08 Mar-12 12:01	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater
Ending Date:	10 Mar-12 13:01	Species:	Mytilis galloprovincialis	Brine:	Not Applicable
Duration:	49h	Source:	Carlsbad Aquafarms CA	Age:	
Sample ID:	06-1047-0553	Code:	MYT030812	Client:	Internal Lab
Sample Date:	08 Mar-12	Material:	Ammonia (Unionized)	Project:	
Receive Date:		Source:	Reference Toxicant		
Sample Age:	12h	Station:			

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	0	C > T	Not Run	0.05	0.075	0.06124		10.39%

Bonferroni Adj t Test

Control	vs	Conc-mg/L	Test Stat	Critical	MSD	P-Value	Decision(5%)
Negative Control		0.028	0.04714	2.508	0.1733	1.0000	Non-Significant Effect
		0.05	1.278	2.508	0.1501	0.5368	Non-Significant Effect
		0.075*	2.998	2.508	0.1501	0.0166	Significant Effect
		0.097*	9.928	2.508	0.1501	<0.0001	Significant Effect
		0.119*	19.78	2.508	0.1501	<0.0001	Significant Effect

Test Acceptability

Attribute	Test Stat	TAC Limits	Overlap	Decision
PMSD	0.1039	NL - 0.25	No	Result Within Limits

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision
Extreme Value	Grubbs Single Outlier	2.835	2.876	0.0601	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	5.261135	1.052227	5	117.5	<0.0001	Significant Effect
Error	0.1969601	0.008952732	22			
Total	5.458095	1.06118	27			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	6.707	15.09	0.2433	Equal Variances
Variances	Mod Levene Equality of Variance	0.872	4.437	0.5213	Equal Variances
Distribution	Shapiro-Wilk Normality	0.9676		0.5184	Normal Distribution
Distribution	Kolmogorov-Smirnov	0.115	0.1914	0.4394	Normal Distribution
Distribution	D'Agostino Skewness	0.9777	2.576	0.3282	Normal Distribution
Distribution	D'Agostino Kurtosis	1.574	2.576	0.1154	Normal Distribution
Distribution	D'Agostino Omnibus	3.434	9.21	0.1796	Normal Distribution

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 07-2364-9447 Endpoint: Combined Proportion Normal CETIS Version: CETISv1.7.0
Analyzed: 23 Mar-12 10:07 Analysis: Parametric-Multiple Comparison Official Results: Yes

Combined Proportion Normal Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Control	5	0.9203	0.9075	0.933	0.8649	0.9527	0.006236	0.03358	3.65%	0.0%
0.028		3	0.9144	0.8945	0.9344	0.8716	0.973	0.009746	0.05248	5.74%	0.64%
0.05		5	0.8743	0.8566	0.892	0.7973	0.9189	0.008629	0.04647	5.32%	4.99%
0.075		5	0.7905	0.7516	0.8295	0.6824	0.9527	0.01901	0.1024	12.95%	14.1%
0.097		5	0.4122	0.3718	0.4525	0.2432	0.5203	0.0197	0.1061	25.74%	55.21%
0.119		5	0.01216	0.008811	0.01551	0	0.02027	0.001636	0.00881	72.44%	98.68%

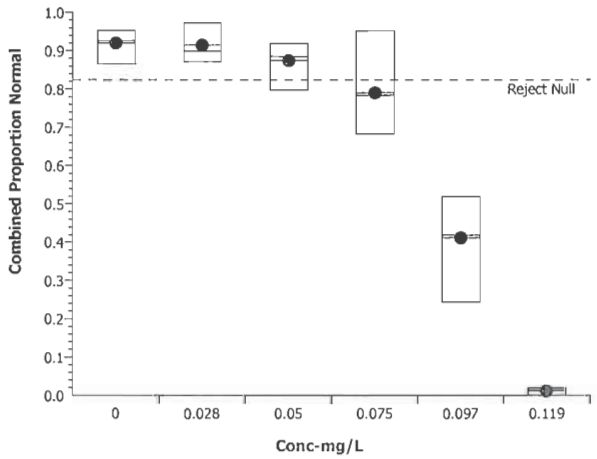
Angular (Corrected) Transformed Summary

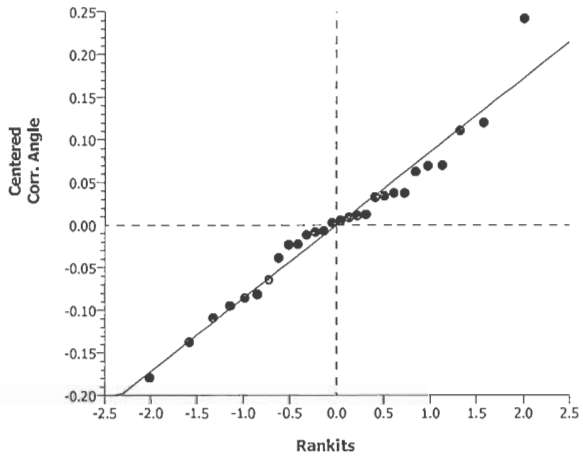
Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Contr	5	1.289	1.266	1.311	1.194	1.352	0.01099	0.05919	4.59%	0.0%
0.028		3	1.286	1.245	1.326	1.204	1.406	0.0197	0.1061	8.25%	0.25%
0.05		5	1.212	1.187	1.238	1.104	1.282	0.01248	0.06719	5.54%	5.93%
0.075		5	1.109	1.054	1.165	0.9721	1.352	0.02711	0.146	13.16%	13.92%
0.097		5	0.6948	0.6525	0.7371	0.5158	0.8057	0.02066	0.1113	16.01%	46.09%
0.119		5	0.1051	0.08855	0.1217	0.04111	0.1429	0.008092	0.04358	41.45%	91.84%

Combined Proportion Normal Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9257	0.9392	0.9527	0.8649	0.9189
0.028		0.973	0.8986	0.8716		
0.05		0.8851	0.7973	0.8716	0.8986	0.9189
0.075		0.9527	0.7297	0.7838	0.8041	0.6824
0.097		0.5203	0.2432	0.4797	0.3986	0.4189
0.119		0.02027	0.006757	0.01351	0.02027	0

Graphics





Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	15-7595-7517	Endpoint:	Combined Proportion Normal	CETIS Version:	CETISv1.7.0
Analyzed:	23 Mar-12 10:07	Analysis:	Linear Interpolation (ICPIN)	Official Results:	Yes
Batch ID:	01-9921-0211	Test Type:	Development-Survival	Analyst:	
Start Date:	08 Mar-12 12:01	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater
Ending Date:	10 Mar-12 13:01	Species:	Mytilis galloprovincialis	Brine:	Not Applicable
Duration:	49h	Source:	Carlsbad Aquafarms CA	Age:	
Sample ID:	06-1047-0553	Code:	MYT030812	Client:	Internal Lab
Sample Date:	08 Mar-12	Material:	Ammonia (Unionized)	Project:	
Receive Date:		Source:	Reference Toxicant		
Sample Age:	12h	Station:			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	7055475	280	Yes	Two-Point Interpolation

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision(5%)
Extreme Value	Grubbs Extreme Value	2.835	2.876	0.0601	No Outliers Detected

Point Estimates

Level	mg/L	95% LCL	95% UCL
EC5	0.05002	N/A	0.07182
EC10	0.06375	0.03155	0.09053
EC15	0.07548	0.04466	0.08275
EC20	0.07816	0.06037	0.08493
EC25	0.08083	0.07109	0.0872
EC40	0.08886	0.08134	0.09643
EC50	0.09421	0.08544	0.1026

Combined Proportion Normal Summary

			Calculated Variate(A/B)								
Conc-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Negative Control	5	0.9203	0.8649	0.9527	0.006131	0.03358	3.65%	0.0%	681	740
0.028		3	0.9144	0.8716	0.973	0.009582	0.05248	5.74%	0.64%	406	444
0.05		5	0.8743	0.7973	0.9189	0.008484	0.04647	5.32%	4.99%	647	740
0.075		5	0.7905	0.6824	0.9527	0.01869	0.1024	12.95%	14.1%	585	740
0.097		5	0.4122	0.2432	0.5203	0.01937	0.1061	25.74%	55.21%	305	740
0.119		5	0.01216	0	0.02027	0.001608	0.00881	72.44%	98.68%	8	740

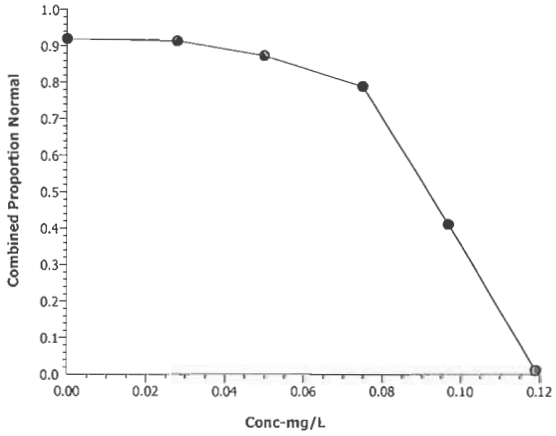
Combined Proportion Normal Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9257	0.9392	0.9527	0.8649	0.9189
0.028		0.973	0.8986	0.8716		
0.05		0.8851	0.7973	0.8716	0.8986	0.9189
0.075		0.9527	0.7297	0.7838	0.8041	0.6824
0.097		0.5203	0.2432	0.4797	0.3986	0.4189
0.119		0.02027	0.006757	0.01351	0.02027	0

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	15-7595-7517	**Endpoint:**	Combined Proportion Normal	**CETIS Version:**	CETISv1.7.0
Analyzed:	23 Mar-12 10:07	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



CETIS Measurement Report

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	01-9921-0211	Test Type:	Development-Survival	Analyst:	
Start Date:	08 Mar-12 12:01	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Laboratory Seawater
Ending Date:	10 Mar-12 13:01	Species:	Mytilis galloprovincialis	Brine:	Not Applicable
Duration:	49h	Source:	Carlsbad Aquafarms CA	Age:	
Sample ID:	06-1047-0553	Code:	MYT030812	Client:	Internal Lab
Sample Date:	08 Mar-12	Material:	Ammonia (Unionized)	Project:	
Receive Date:		Source:	Reference Toxicant		
Sample Age:	12h	Station:			

Dissolved Oxygen-mg/L

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	6.95	6.878	7.022	6.8	7.1	0.03536	0.2121	3.05%	0
0.028		2	6.95	6.926	6.974	6.9	7	0.01178	0.07071	1.02%	0
0.05		2	7.2	7.152	7.248	7.1	7.3	0.02357	0.1414	1.96%	0
0.075		2	7.6	7.409	7.791	7.2	8	0.09428	0.5657	7.44%	0
0.097		2	7.7	7.604	7.796	7.5	7.9	0.04714	0.2828	3.67%	0
0.119		2	7.75	7.63	7.87	7.5	8	0.05893	0.3536	4.56%	0
Overall		12	7.358			6.8	8				0 (0%)

Total Ammonia (N)-mg/L

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	1	0			0	0	0	0		0
0.028		1	1.58			1.58	1.58	0	0	0.0%	0
0.05		1	2.88			2.88	2.88	0	0	0.0%	0
0.075		1	4.27			4.27	4.27	0	0	0.0%	0
0.097		1	5.55			5.55	5.55	0	0	0.0%	0
0.119		1	6.77			6.77	6.77	0	0	0.0%	0
Overall		6	3.508			0	6.77				0 (0%)

pH-Units

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.8	7.8	7.8	7.8	7.8	0	0	0.0%	0
0.028		2	7.8	7.8	7.8	7.8	7.8	0	0	0.0%	0
0.05		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
0.075		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
0.097		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
0.119		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
Overall		12	7.833			7.8	7.9				0 (0%)

Salinity-ppt

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	34	34	34	34	34	0	0	0.0%	0
0.028		2	34	34	34	34	34	0	0	0.0%	0
0.05		2	34	34	34	34	34	0	0	0.0%	0
0.075		2	34	34	34	34	34	0	0	0.0%	0
0.097		2	34	34	34	34	34	0	0	0.0%	0
0.119		2	34	34	34	34	34	0	0	0.0%	0
Overall		12	34			34	34				0 (0%)

Temperature-°C

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	14.75	14.73	14.77	14.7	14.8	0.01179	0.07075	0.48%	0
0.028		2	14.75	14.73	14.77	14.7	14.8	0.01179	0.07075	0.48%	0
0.05		2	14.75	14.73	14.77	14.7	14.8	0.01179	0.07075	0.48%	0
0.075		2	14.75	14.73	14.77	14.7	14.8	0.01179	0.07075	0.48%	0
0.097		2	14.75	14.73	14.77	14.7	14.8	0.01179	0.07075	0.48%	0
0.119		2	14.75	14.73	14.77	14.7	14.8	0.01179	0.07075	0.48%	0
Overall		12	14.75			14.7	14.8				0 (0%)

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

Conc-mg/L	Control Type	1	2
0	Negative Contr	6.8	7.1
0.028		6.9	7
0.05		7.1	7.3
0.075		7.2	8
0.097		7.5	7.9
0.119		7.5	8

Total Ammonia (N)-mg/L

Conc-mg/L	Control Type	1
0	Negative Contr	0
0.028		1.58
0.05		2.88
0.075		4.27
0.097		5.55
0.119		6.77

pH-Units

Conc-mg/L	Control Type	1	2
0	Negative Contr	7.8	7.8
0.028		7.8	7.8
0.05		7.9	7.8
0.075		7.9	7.8
0.097		7.9	7.8
0.119		7.9	7.8

Salinity-ppt

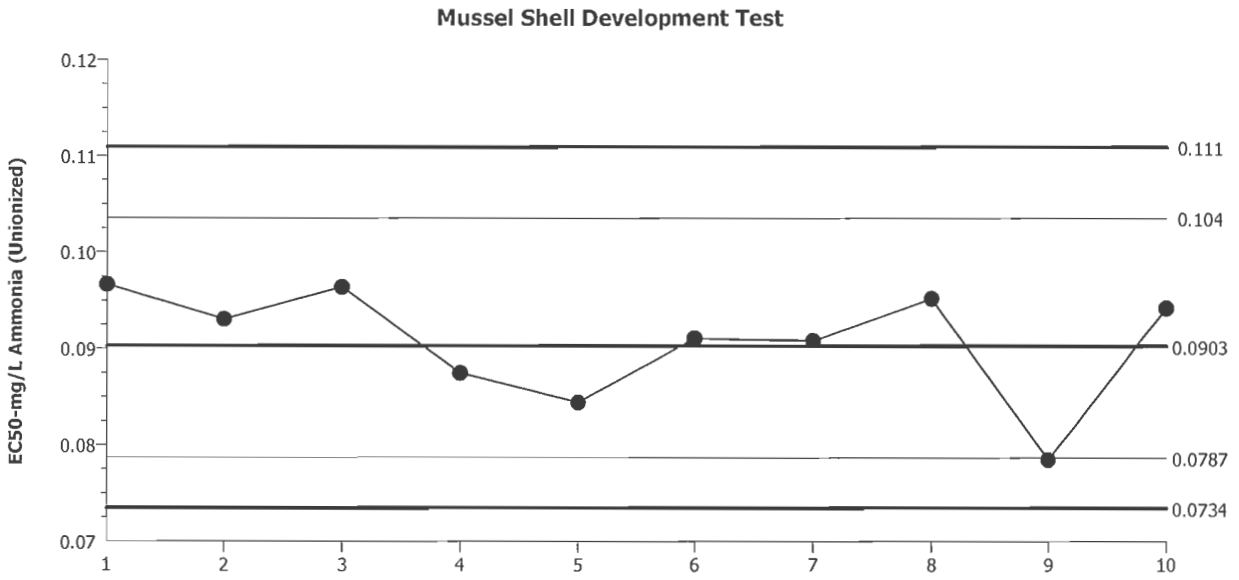
Conc-mg/L	Control Type	1	2
0	Negative Contr	34	34
0.028		34	34
0.05		34	34
0.075		34	34
0.097		34	34
0.119		34	34

Temperature-°C

Conc-mg/L	Control Type	1	2
0	Negative Contr	14.8	14.7
0.028		14.8	14.7
0.05		14.8	14.7
0.075		14.8	14.7
0.097		14.8	14.7
0.119		14.8	14.7

Mussel Shell Development Test — Aquatic Bioassay & Consulting Labs, Inc.

Test Type:	Development-Survival	**Organism:**	Mytilis galloprovincialis (Bay Mussel)	**Material:**	Ammonia (Unionized)
Protocol:	EPA/600/R-95/136 (1995)	**Endpoint:**	Combined Proportion Normal	**Source:**	Reference Toxicant-REF



Mean:	0.09027	**Count:**	9	**-2s Warning Limit:**	0.07867	**-3s Action Limit:**	0.07345
Sigma:	N/A	**CV:**	7.11%	**+2s Warning Limit:**	0.1036	**+3s Action Limit:**	0.1109

Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2009	Aug	24	0.09668	0.006413	0.9986			09-4636-1605	10-4328-4696
2		Sep	8	0.09307	0.002801	0.4446			18-0585-9617	13-4415-4900
3	2010	Feb	23	0.0964	0.006138	0.9572			01-3844-4523	12-0454-3247
4	2011	Mar	7	0.08749	-0.00277	-0.4541			00-8678-7675	06-6857-1675
5		May	24	0.08446	-0.00581	-0.9677			08-3394-5808	15-3996-0530
6		Jul	27	0.0911	0.000831	0.1333			18-9250-9007	00-8896-5591
7		Sep	27	0.09083	0.000563	0.09043			03-6263-3114	20-9876-3119
8		Nov	9	0.09521	0.004944	0.7758			15-4390-8572	12-8905-1258
9	2012	Feb	8	0.07851	-0.01175	-2.03	(-)		05-2031-5819	07-3423-6764
10		Mar	8	0.09421	0.003945	0.6224			04-0292-3348	15-7595-7517

aquatic bioassay & consulting laboratories, inc

96 Hour *Eohaustorius estuarius* Survival Bioassay - Standard Toxicant

DATE: 8 March 2012

STANDARD TOXICANT: Ammonium Chloride

ENDPOINT: SURVIVAL

UNIONIZED AMMONIA

NOEC = 0.233 mg/L

IC25 = 0.6111 mg/L
IC50 = 1.0900 mg/L

Yours very truly,

Michael Machuzak
Laboratory Director

29 north olive ventura, ca 93001 (805) 643 5621 www.aquabio.org

CETIS Summary Report

Report Date: 23 Mar-12 10:19 (p 1 of 1)
Test Code: 04-8815-8853/EOH030812

Reference Toxicant 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	11-3363-1797	Test Type:	Survival	Analyst:	
Start Date:	08 Mar-12 13:01	Protocol:	EPA/600/R-94/025 (1994)	Diluent:	Laboratory Seawater
Ending Date:	12 Mar-12 14:00	Species:	Eohaustorius estuarius	Brine:	Not Applicable
Duration:	4d 1h	Source:	Northwestern Aquatic Science, OR	Age:	
Sample ID:	20-8071-1714	Code:	EOH030812	Client:	Internal Lab
Sample Date:	08 Mar-12	Material:	Ammonia (Unionized)	Project:	
Receive Date:		Source:	Reference Toxicant		
Sample Age:	13h	Station:			

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
15-3089-7011	Survival Rate	0.233	0.458	0.3267	13.98%		Dunnett's Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
09-8218-8992	Survival Rate	EC5	0.2996	0.193	0.6249		Linear Interpolation (ICPIN)
		EC10	0.3663	0.269	0.6698		
		EC15	0.4329	0.3045	0.7113		
		EC20	0.5168	0.318	0.7632		
		EC25	0.6111	0.3301	0.8235		
		EC40	0.8956	0.7042	1.061		
		EC50	1.09	0.8909	1.246		

Survival Rate Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Control	4	0.95	0.9284	0.9716	0.9	1	0.01054	0.05774	6.08%	0.0%
0.233		4	0.975	0.9563	0.9937	0.9	1	0.009129	0.05	5.13%	-2.63%
0.458		4	0.8	0.7472	0.8528	0.7	1	0.02582	0.1414	17.68%	15.79%
0.85		4	0.6	0.5695	0.6305	0.5	0.7	0.01491	0.08165	13.61%	36.84%
1.66		4	0.2	0.1695	0.2305	0.1	0.3	0.01491	0.08165	40.82%	78.95%
3.423		4	0	0	0	0	0	0	0		100.0%

Survival Rate Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	0.9	1
0.233		0.9	1	1	1
0.458		1	0.8	0.7	0.7
0.85		0.6	0.7	0.5	0.6
1.66		0.3	0.1	0.2	0.2
3.423		0	0	0	0

Reference Toxicant 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	15-3089-7011	Endpoint:	Survival Rate	CETIS Version:	CETISv1.7.0
Analyzed:	23 Mar-12 10:19	Analysis:	Parametric-Control vs Treatments	Official Results:	Yes
Batch ID:	11-3363-1797	Test Type:	Survival	Analyst:	
Start Date:	08 Mar-12 13:01	Protocol:	EPA/600/R-94/025 (1994)	Diluent:	Laboratory Seawater
Ending Date:	12 Mar-12 14:00	Species:	Eohaustorius estuarius	Brine:	Not Applicable
Duration:	4d 1h	Source:	Northwestern Aquatic Science, OR	Age:	
Sample ID:	20-8071-1714	Code:	EOH030812	Client:	Internal Lab
Sample Date:	08 Mar-12	Material:	Ammonia (Unionized)	Project:	
Receive Date:		Source:	Reference Toxicant		
Sample Age:	13h	Station:			

Data Transform	Zeta	Alt Hyp	Monte Carlo	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	0	C > T	Not Run	0.233	0.458	0.3267		13.98%

Dunnett's Multiple Comparison Test

Control	vs	Conc-mg/L	Test Stat	Critical	MSD	P-Value	Decision(5%)
Negative Control		0.233	-0.4762	2.356	0.2016	0.9172	Non-Significant Effect
		0.458*	2.398	2.356	0.2016	0.0463	Significant Effect
		0.85*	5.182	2.356	0.2016	0.0002	Significant Effect
		1.66*	10.21	2.356	0.2016	<0.0001	Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision
Extreme Value	Grubbs Single Outlier	2.666	2.708	0.0611	No Outliers Detected

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(5%)
Between	2.257281	0.5643201	4	38.55	<0.0001	Significant Effect
Error	0.2195976	0.01463984	15			
Total	2.476878	0.57896	19			

ANOVA Assumptions

Attribute	Test	Test Stat	Critical	P-Value	Decision(1%)
Variances	Bartlett Equality of Variance	3.451	13.28	0.4854	Equal Variances
Variances	Mod Levene Equality of Variance	0.6895	4.893	0.6105	Equal Variances
Distribution	Shapiro-Wilk Normality	0.922		0.1085	Normal Distribution
Distribution	Kolmogorov-Smirnov	0.1258	0.2235	0.5778	Normal Distribution
Distribution	D'Agostino Skewness	1.539	2.576	0.1237	Normal Distribution
Distribution	D'Agostino Kurtosis	1.192	2.576	0.2333	Normal Distribution
Distribution	D'Agostino Omnibus	3.79	9.21	0.1503	Normal Distribution

Reference Toxicant 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 15-3089-7011 Endpoint: Survival Rate CETIS Version: CETISv1.7.0
Analyzed: 23 Mar-12 10:19 Analysis: Parametric-Control vs Treatments Official Results: Yes

Survival Rate Summary

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Control	4	0.95	0.928	0.972	0.9	1	0.01072	0.05773	6.08%	0.0%
0.233		4	0.975	0.956	0.994	0.9	1	0.009285	0.05	5.13%	-2.63%
0.458		4	0.8	0.7462	0.8538	0.7	1	0.02626	0.1414	17.68%	15.79%
0.85		4	0.6	0.5689	0.6311	0.5	0.7	0.01516	0.08165	13.61%	36.84%
1.66		4	0.2	0.1689	0.2311	0.1	0.3	0.01516	0.08165	40.82%	78.95%
3.423		4	0	0	0	0	0	0	0		100.0%

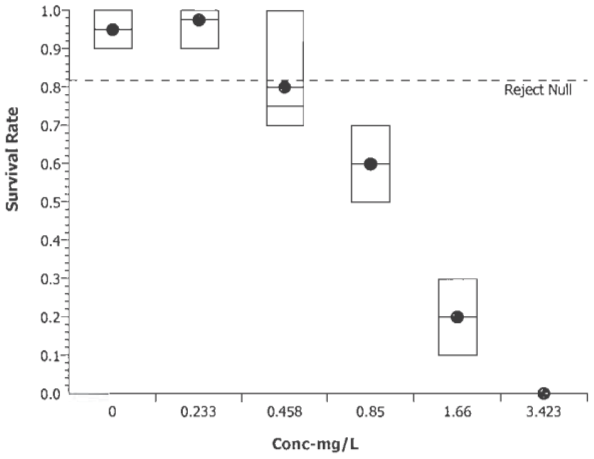
Angular (Corrected) Transformed Summary

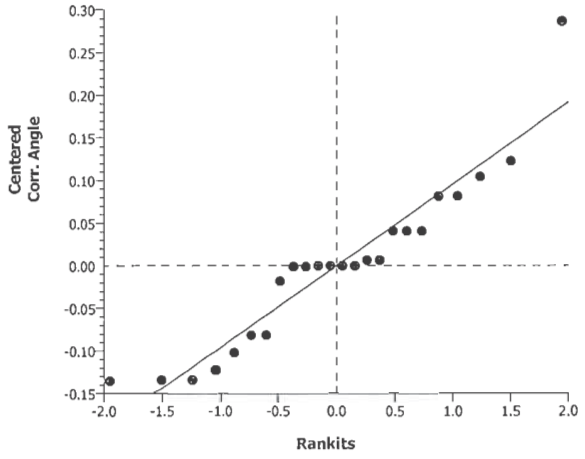
Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	Diff%
0	Negative Contr	4	1.331	1.295	1.366	1.249	1.412	0.01747	0.09409	7.07%	0.0%
0.233		4	1.371	1.34	1.402	1.249	1.412	0.01513	0.08149	5.94%	-3.06%
0.458		4	1.125	1.05	1.201	0.9912	1.412	0.03691	0.1988	17.66%	15.42%
0.85		4	0.8872	0.8552	0.9191	0.7854	0.9912	0.0156	0.08401	9.47%	33.32%
1.66		4	0.4572	0.417	0.4973	0.3218	0.5796	0.0196	0.1055	23.09%	65.64%
3.423		4	0.1588	0.1588	0.1588	0.1588	0.1588	0	0	0.0%	88.07%

Survival Rate Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	0.9	1
0.233		0.9	1	1	1
0.458		1	0.8	0.7	0.7
0.85		0.6	0.7	0.5	0.6
1.66		0.3	0.1	0.2	0.2
3.423		0	0	0	0

Graphics





CETIS Analytical Report

Report Date: 23 Mar-12 10:19 (p 1 of 2)
Test Code: 04-8815-8853/EOH030812

Reference Toxicant 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	09-8218-8992	Endpoint:	Survival Rate	CETIS Version:	CETISv1.7.0
Analyzed:	23 Mar-12 10:19	Analysis:	Linear Interpolation (ICPIN)	Official Results:	Yes
Batch ID:	11-3363-1797	Test Type:	Survival	Analyst:	
Start Date:	08 Mar-12 13:01	Protocol:	EPA/600/R-94/025 (1994)	Diluent:	Laboratory Seawater
Ending Date:	12 Mar-12 14:00	Species:	Eohaustorius estuarius	Brine:	Not Applicable
Duration:	4d 1h	Source:	Northwestern Aquatic Science, OR	Age:	
Sample ID:	20-8071-1714	Code:	EOH030812	Client:	Internal Lab
Sample Date:	08 Mar-12	Material:	Ammonia (Unionized)	Project:	
Receive Date:		Source:	Reference Toxicant		
Sample Age:	13h	Station:			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	5795186	280	Yes	Two-Point Interpolation

Point Estimates

Level	mg/L	95% LCL	95% UCL
EC5	0.2996	0.193	0.6249
EC10	0.3663	0.269	0.6698
EC15	0.4329	0.3045	0.7113
EC20	0.5168	0.318	0.7632
EC25	0.6111	0.3301	0.8235
EC40	0.8956	0.7042	1.061
EC50	1.09	0.8909	1.246

Survival Rate Summary

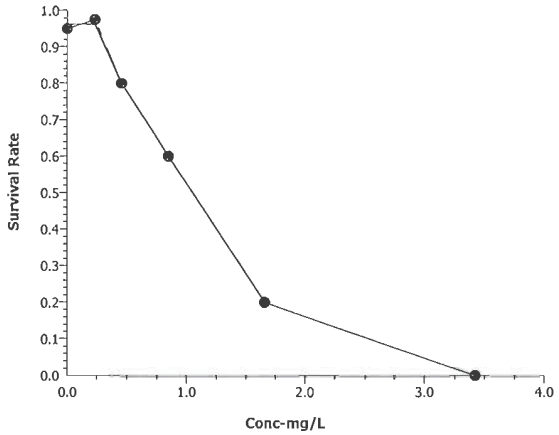
			Calculated Variate(A/B)								
Conc-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	Diff%	A	B
0	Negative Control	4	0.95	0.9	1	0.01054	0.05773	6.08%	0.0%	38	40
0.233		4	0.975	0.9	1	0.009129	0.05	5.13%	-2.63%	39	40
0.458		4	0.8	0.7	1	0.02582	0.1414	17.68%	15.79%	32	40
0.85		4	0.6	0.5	0.7	0.01491	0.08165	13.61%	36.84%	24	40
1.66		4	0.2	0.1	0.3	0.01491	0.08165	40.82%	78.95%	8	40
3.423		4	0	0	0	0	0		100.0%	0	40

Survival Rate Detail

Conc-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	0.9	0.9	1
0.233		0.9	1	1	1
0.458		1	0.8	0.7	0.7
0.85		0.6	0.7	0.5	0.6
1.66		0.3	0.1	0.2	0.2
3.423		0	0	0	0

Analysis ID:	09-8218-8992	Endpoint:	Survival Rate	CETIS Version:	CETISv1.7.0
Analyzed:	23 Mar-12 10:19	Analysis:	Linear Interpolation (ICPIN)	Official Results:	Yes

Graphics



CETIS Measurement Report

Report Date: 23 Mar-12 10:19 (p 1 of 2)
Test Code: 04-8815-8853/EOH030812

Reference Toxicant 96-h Acute Survival Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	11-3363-1797	Test Type:	Survival	Analyst:	
Start Date:	08 Mar-12 13:01	Protocol:	EPA/600/R-94/025 (1994)	Diluent:	Laboratory Seawater
Ending Date:	12 Mar-12 14:00	Species:	Eohaustorius estuarius	Brine:	Not Applicable
Duration:	4d 1h	Source:	Northwestern Aquatic Science, OR	Age:	

Sample ID:	20-8071-1714	Code:	EOH030812	Client:	Internal Lab
Sample Date:	08 Mar-12	Material:	Ammonia (Unionized)	Project:	
Receive Date:		Source:	Reference Toxicant		
Sample Age:	13h	Station:			

Dissolved Oxygen-mg/L

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.15	6.887	7.413	6.6	7.7	0.1296	0.7778	10.88%	0
0.233		2	6.55	6.383	6.717	6.2	6.9	0.0825	0.495	7.56%	0
0.458		2	6.45	6.283	6.617	6.1	6.8	0.0825	0.495	7.67%	0
0.85		2	6.5	6.404	6.596	6.3	6.7	0.04714	0.2828	4.35%	0
1.66		2	6.4	6.256	6.544	6.1	6.7	0.07071	0.4243	6.63%	0
3.423		2	6.3	6.156	6.444	6	6.6	0.07071	0.4243	6.73%	0
Overall		12	6.558			6	7.7				0 (0%)

Total Ammonia (N)-mg/L

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	1	0			0	0	0	0		0
0.233		1	12.5			12.5	12.5	0	0	0.0%	0
0.458		1	24.6			24.6	24.6	0	0	0.0%	0
0.85		1	45.7			45.7	45.7	0	0	0.0%	0
1.66		1	89.2			89.2	89.2	0	0	0.0%	0
3.423		1	184			184	184	0	0	0.0%	0
Overall		6	59.33			0	184				0 (0%)

pH-Units

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
0.233		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
0.458		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
0.85		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
1.66		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
3.423		2	7.85	7.826	7.874	7.8	7.9	0.01178	0.07071	0.9%	0
Overall		12	7.85			7.8	7.9				0 (0%)

Salinity-ppt

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	20	20	20	20	20	0	0	0.0%	0
0.233		2	20	20	20	20	20	0	0	0.0%	0
0.458		2	20	20	20	20	20	0	0	0.0%	0
0.85		2	20	20	20	20	20	0	0	0.0%	0
1.66		2	20	20	20	20	20	0	0	0.0%	0
3.423		2	20	20	20	20	20	0	0	0.0%	0
Overall		12	20			20	20				0 (0%)

Temperature-°C

Conc-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	14.85	14.83	14.87	14.8	14.9	0.0118	0.07077	0.48%	0
0.233		2	14.85	14.83	14.87	14.8	14.9	0.0118	0.07077	0.48%	0
0.458		2	14.85	14.83	14.87	14.8	14.9	0.0118	0.07077	0.48%	0
0.85		2	14.85	14.83	14.87	14.8	14.9	0.0118	0.07077	0.48%	0
1.66		2	14.85	14.83	14.87	14.8	14.9	0.0118	0.07077	0.48%	0
3.423		2	14.85	14.83	14.87	14.8	14.9	0.0118	0.07077	0.48%	0
Overall		12	14.85			14.8	14.9				0 (0%)

Reference Toxicant 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

Conc-mg/L	Control Type	1	2
0	Negative Contr	7.7	6.6
0.233		6.9	6.2
0.458		6.8	6.1
0.85		6.7	6.3
1.66		6.7	6.1
3.423		6.6	6

Total Ammonia (N)-mg/L

Conc-mg/L	Control Type	1
0	Negative Contr	0
0.233		12.5
0.458		24.6
0.85		45.7
1.66		89.2
3.423		184

pH-Units

Conc-mg/L	Control Type	1	2
0	Negative Contr	7.9	7.8
0.233		7.9	7.8
0.458		7.9	7.8
0.85		7.9	7.8
1.66		7.9	7.8
3.423		7.9	7.8

Salinity-ppt

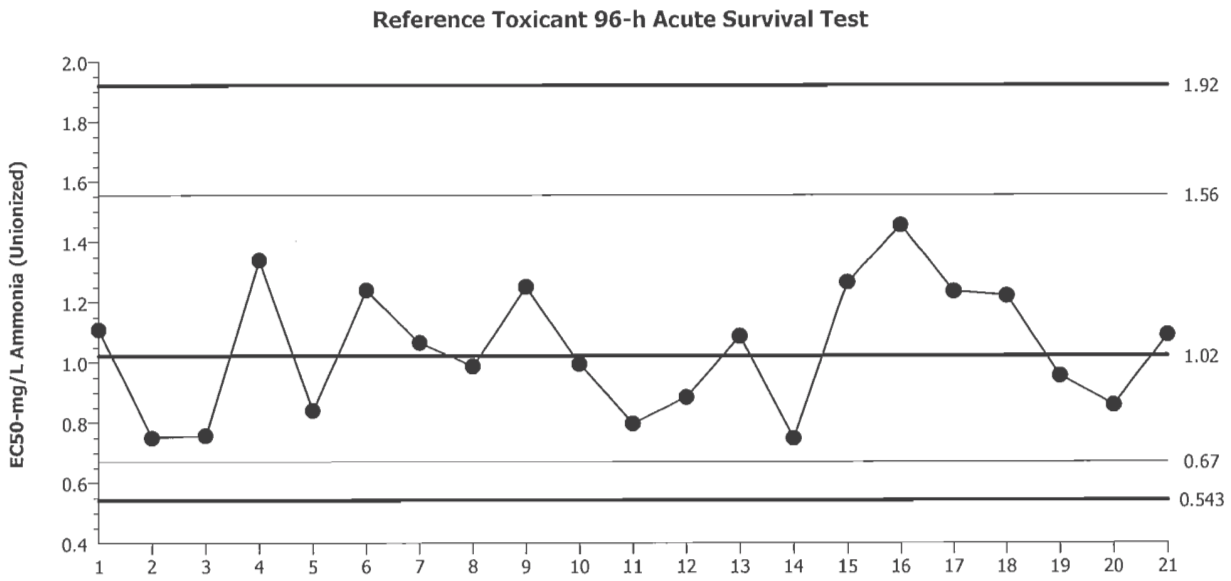
Conc-mg/L	Control Type	1	2
0	Negative Contr	20	20
0.233		20	20
0.458		20	20
0.85		20	20
1.66		20	20
3.423		20	20

Temperature-°C

Conc-mg/L	Control Type	1	2
0	Negative Contr	14.8	14.9
0.233		14.8	14.9
0.458		14.8	14.9
0.85		14.8	14.9
1.66		14.8	14.9
3.423		14.8	14.9

Reference Toxicant 96-h Acute Survival Test — Aquatic Bioassay & Consulting Labs, Inc.

Test Type:	Survival	**Organism:**	Eohaustorius estuarius (Amphipod)	**Material:**	Ammonia (Unionized)
Protocol:	EPA/600/R-94/025 (1994)	**Endpoint:**	Survival Rate	**Source:**	Reference Toxicant-REF



Mean:	1.021	**Count:**	20	**-2s Warning Limit:**	0.6703	**-3s Action Limit:**	0.543
Sigma:	N/A	**CV:**	23.40%	**+2s Warning Limit:**	1.556	**+3s Action Limit:**	1.92

Quality Control Data

Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2009	Aug	17	1.11	0.08838	0.3943			04-8672-6908	13-0847-4429
2			21	0.7502	-0.2709	-1.465			00-2983-8075	02-5975-1960
3		Sep	25	0.758	-0.2631	-1.416			03-1869-8778	16-6741-8514
4		Nov	13	1.34	0.3187	1.29			01-5575-1041	16-3612-3563
5	2010	Feb	26	0.8411	-0.1801	-0.9216			09-1794-0873	13-7746-9954
6		Aug	5	1.24	0.2189	0.9226			03-3306-6014	20-7390-8216
7		Sep	24	1.066	0.0446	0.2031			12-2363-0098	08-9443-5976
8		Oct	22	0.9873	-0.03385	-0.1602			05-7312-6260	16-0672-2436
9		Nov	5	1.252	0.2306	0.9673			20-0316-6317	10-9515-4671
10	2011	Mar	7	0.9948	-0.02631	-0.124			12-5949-3736	17-5586-8074
11		Apr	18	0.7975	-0.2236	-1.174			17-2357-4761	12-9572-7064
12		May	27	0.8849	-0.1362	-0.6803			20-4249-8468	20-3305-0115
13		Jul	26	1.088	0.06667	0.3005			15-6466-3364	18-7739-6289
14		Aug	15	0.749	-0.2721	-1.472			04-0579-2611	20-2682-9787
15			22	1.267	0.2455	1.024			01-8562-7521	18-3945-4230
16			26	1.456	0.4348	1.685			01-9813-9452	03-2358-1983
17		Sep	16	1.236	0.2153	0.9089			20-2469-0802	11-4879-7057
18			30	1.222	0.201	0.8535			15-4974-0442	02-6622-0099
19		Oct	21	0.9559	-0.06524	-0.3136			09-6621-6567	07-9152-2508
20			31	0.8587	-0.1624	-0.8228			05-3620-8315	01-4804-3827
21	2012	Mar	8	1.09	0.06935	0.3122			04-8815-8853	09-8218-8992

Test America Version 7/19/2010

CHAIN OF CUSTODY FORM

Client Name/Address:
MWH-Arcadia
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007

Test America Contact: Debby Wilson

Project Manager: Bronwyn Kelly

Sampler: Rick Brantagan

Project:
Boeing-SSFL NPDES
Annual Sediment Arroyo Simi – Frontier Park

Phone Number: Debby Wilson
(626) 568-5691
Fax Number:
(626) 568-6515
949-261-1022

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Chronic 10-day eohaustorius estuarius Toxicity	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas)	Total Ammonia	% Moisture	Particle Size Distribution	Total Organic Carbon	PCBs (8082)	Chlordane, Dieldrin, Toxaphene (8081), 4,4-DDD, 4,4-DDE, 4,4-DDT			
Arroyo Simi-FP	S	1L wide mouth Plastic	4	2-23-2012 11:30	4C in the Dark	1A, 1B, 1C, 1D	X	X									
Arroyo Simi-FP	S	9 oz Jar	1		4 deg C	2A			X								
Arroyo Simi-FP	S	9 oz Jar	1		4 deg C	3A				X		X					
Arroyo Simi-FP	S	9 oz Jar	1		4 deg C	4A					x						
Arroyo Simi-FP	S	9 oz Jar	1	2-23-2012 11:30	4 deg C	5A							X	X			

ANALYSIS REQUIRED

Field readings:
Temp =
pH = 7.5
DO = 13.11 mg
Conductivity = 2.07 ms/cm
Water Velocity (ft/sec) = 2/60 sec
Time of readings = 11:30

Comments

Keep sample in cooler in the dark until delivered to ABC Labs

Relinquished By	Date/Time	Received By	Date/Time
	2-23-2012 12:45		2-23-12 12:45
	2-23-12 13:05		2/23/12 13:05
	2/23/12 3:35pm		2-23-12 1535

Turn around Time: (check)
24 Hours _____ 5 Days _____
48 Hours _____ 10 Days _____
72 Hours _____ Normal X

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

Data Requirements: (check)
No Level IV ____ All Level IV ____
NPDES Level IV X On Ice: _____

PTS Laboratories, Inc.

8100 Secura Way • Santa Fe Springs, CA 90670
Telephone (562) 347-2500 • Fax (562) 907-3610

March 6, 2012

Debby Wilson
TestAmerica
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5817

Re: PTS File No: 42136
Physical Properties Data
Boeing SSFL; 4400624

Dear Ms. Wilson:

Please find enclosed report for Physical Properties analyses conducted upon the sample received from your Boeing SSFL; 4400624 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. An electronic version of the report has previously been sent to your attention via the internet. The sample is currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the sample will be disposed of at that time. You may contact me regarding storage, disposal, or return of the sample.

PTS Laboratories appreciates the opportunity to be of service. If you have any questions or require additional information, please contact Rachel Spitz at (562) 347-2504.

Sincerely,
PTS Laboratories

for Rachel Spitz

Michael Mark Brady, P.G.
District Manager

Encl.

PTS Laboratories

Project Name: Boeing SSFL
Project Number: 4400624

PTS File No: 42136
Client: TestAmerica

TEST PROGRAM - 20120229

CORE ID	Depth ft.	Core Recovery ft.	Grain Size Analysis ASTM D4464M					Notes
		Plugs:	Grab					
Date Received: 20120229								
Arroyo Simi-FP	N/A	N/A	X					
TOTALS:	1 jar		1					

Laboratory Test Program Notes

Standard TAT for basic analysis is 10-15 business days.

PARTICLE SIZE SUMMARY

(METHODOLOGY: ASTM D422/D4464M)

PROJECT NAME: Boeing SSFL
PROJECT NO: 4400624

Sample ID	Depth, ft.	Mean Grain Size Description (1)	Median Grain Size mm	Particle Size Distribution, wt. percent						Silt & Clay
				Gravel	Sand Size			Silt	Clay	
					Coarse	Medium	Fine			
Arroyo Simi-FP	N/A	Fine sand	0.058	0.00	0.00	13.40	32.67	38.75	15.18	53.93

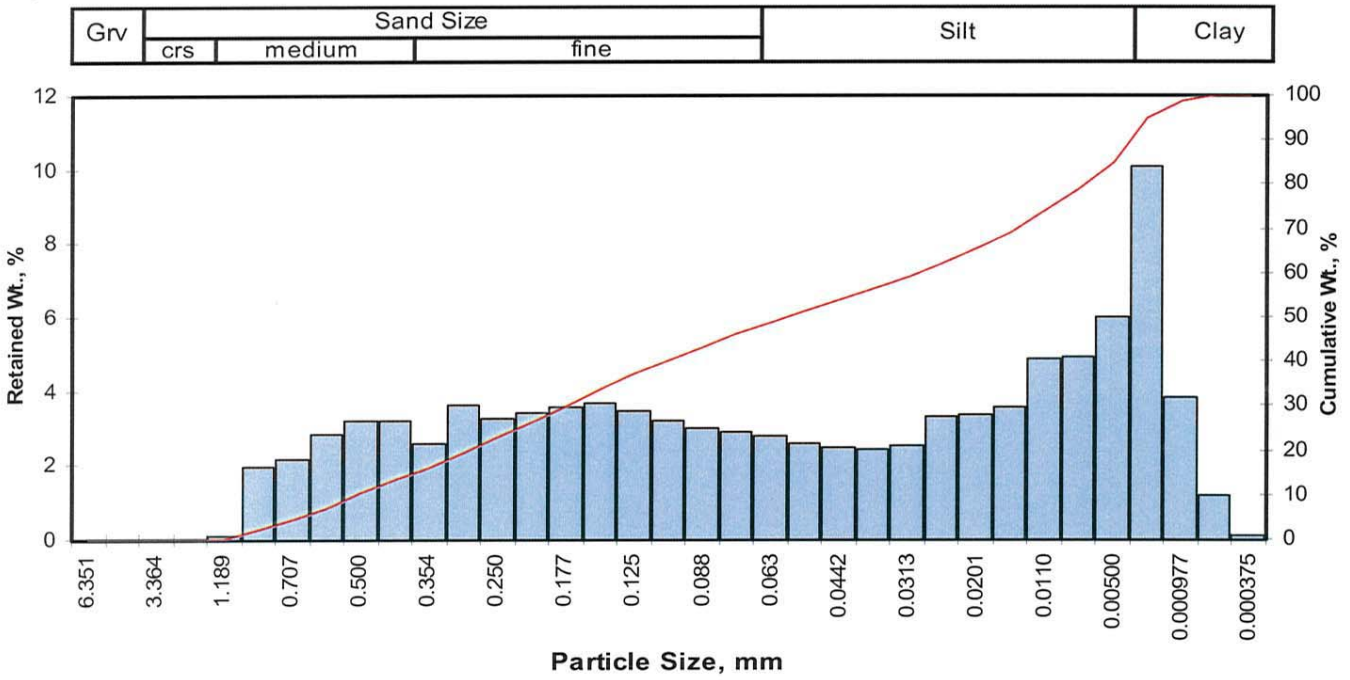
(1) Based on Mean from Trask

PTS Laboratories, Inc.

Particle Size Analysis - ASTM D4464M

Client: TestAmerica
Project: Boeing SSFL
Project No: 4400624

PTS File No: 42136
Sample ID: Arroyo Simi-FP
Depth, ft: N/A



Opening		Phi of	U.S.	Sample Weight,	Increment Weight,	Cumulative Weight,
Inches	Millimeters	Screen	No.	grams	percent	percent
0.2500	6.351	-2.67	1/4	0.00	0.00	0.00
0.1873	4.757	-2.25	4	0.00	0.00	0.00
0.1324	3.364	-1.75	6	0.00	0.00	0.00
0.0787	2.000	-1.00	10	0.00	0.00	0.00
0.0468	1.189	-0.25	16	0.08	0.08	0.08
0.0331	0.841	0.25	20	1.95	1.95	2.03
0.0278	0.707	0.50	25	2.18	2.18	4.21
0.0234	0.595	0.75	30	2.82	2.82	7.03
0.0197	0.500	1.00	35	3.19	3.19	10.22
0.0166	0.420	1.25	40	3.19	3.19	13.40
0.0139	0.354	1.50	45	2.59	2.59	15.99
0.0117	0.297	1.75	50	3.61	3.61	19.60
0.0098	0.250	2.00	60	3.25	3.25	22.85
0.0083	0.210	2.25	70	3.43	3.43	26.28
0.0070	0.177	2.50	80	3.58	3.58	29.86
0.0059	0.149	2.75	100	3.66	3.66	33.52
0.0049	0.125	3.00	120	3.49	3.49	37.01
0.0041	0.105	3.25	140	3.20	3.20	40.20
0.0035	0.088	3.50	170	2.99	2.99	43.19
0.0029	0.074	3.75	200	2.88	2.88	46.07
0.0025	0.063	4.00	230	2.77	2.77	48.84
0.0021	0.053	4.25	270	2.60	2.60	51.44
0.00174	0.0442	4.50	325	2.48	2.48	53.92
0.00146	0.0372	4.75	400	2.45	2.45	56.37
0.00123	0.0313	5.00	450	2.51	2.51	58.88
0.000986	0.0250	5.32	500	3.31	3.31	62.19
0.000790	0.0201	5.64	635	3.34	3.34	65.53
0.000615	0.0156	6.00		3.56	3.56	69.08
0.000435	0.0110	6.50		4.84	4.84	73.92
0.000308	0.00781	7.00		4.89	4.89	78.81
0.000197	0.00500	7.65		6.01	6.01	84.82
0.000077	0.00195	9.00		10.10	10.10	94.92
0.000038	0.000977	10.00		3.82	3.82	98.73
0.000019	0.000488	11.00		1.18	1.18	99.91
0.000015	0.000375	11.38		0.09	0.09	100.00
TOTALS				**100.00**	**100.00**	**100.00**

Cumulative Weight Percent greater than			
Weight	Phi	Particle Size	
percent	Value	Inches	Millimeters
5	0.57	0.0265	0.673
10	0.98	0.0199	0.506
16	1.50	0.0139	0.353
25	2.16	0.0088	0.224
40	3.23	0.0042	0.106
50	4.11	0.0023	0.058
60	5.11	0.0011	0.029
75	6.61	0.0004	0.010
84	7.56	0.0002	0.005
90	8.34	0.0001	0.003
95	9.02	0.0001	0.002

Measure	Trask	Inman	Folk-Ward
Median, phi	4.11	4.11	4.11
Median, in.	0.0023	0.0023	0.0023
Median, mm	0.058	0.058	0.058
Mean, phi	3.09	4.53	4.39
Mean, in.	0.0046	0.0017	0.0019
Mean, mm	0.117	0.043	0.048
Sorting	4.681	3.028	2.795
Skewness	0.828	0.138	0.150
Kurtosis	0.213	0.395	0.778
Grain Size Description (ASTM-USCS Scale)		Fine sand (based on Mean from Trask)	

Description	Retained on Sieve #	Weight Percent
Gravel	4	0.00
Coarse Sand	10	0.00
Medium Sand	40	13.40
Fine Sand	200	32.67
Silt	>0.005 mm	38.75
Clay	<0.005 mm	15.18
	Total	**100**

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

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Wilson, Debby	Carrier Tracking No(s):	COC No: 440-1693.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: debby.wilson@testamericainc.com		Page: Page 1 of 1
Company: PTS laboratories, Inc		Analysis Requested		Job #: 440-3619-1
Address: 8100 Secura Way, ,	Due Date Requested: 3/6/2012			Preservation Codes:
City: Santa Fe Springs	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: CA, 90670				
Phone:	PO #:			Other:
Email:	WO #:			
Project Name: Boeing SSFL	Project #: 44002624			
Site: Boeing SSFL	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT/ Particle Size	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Arroyo Simi-FP (440-3619-1)	2/23/12	11:30 Pacific		Solid			X	1	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time	Company		Date/Time	Company
Relinquished by:	2/29/12	TAI	Received by:	2-29-12 1000	TAI
Relinquished by:	2-29-12 1200	TAI	Received by: Acceda PTS LAB	2/29/12 12:00	PTS LAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No
Custody Seal No.: —
Cooler Temperature(s) °C and Other Remarks: 37°F

RCV 22°F

440-3619

Test America Version 7/19/2010 CHAIN OF CUSTODY FORM

Client Name/Address:
MWH-Arcadia
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007

Test America Contact: Debby Wilson

Project Manager: Bronwyn Kelly

Sampler: Rick Bantag

Project:
Boeing-SSFL NPDES
Annual Sediment Arroyo Simi – Frontier Park

Phone Number:
(626) 568-6691
Fax Number:
(626) 568-6515

ANALYSIS REQUIRED

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Chronic 10-day eohaustorius estuarius Toxicity	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas)	Total Ammonia	% Moisture	Particle Size Distribution	Total Organic Carbon	PCBs (8082)	Chlordane, Dieldrin, Toxaphene (8081), 4,4-DDD, 4,4-DDE, 4,4-DDT			
Arroyo Simi-FP	S	1L wide mouth Plastic	4	2-23-2012 11:30	4C in the Dark	1A, 1B, 1C, 1D	X	X									
Arroyo Simi-FP	S	9 oz Jar	1		4 deg C	2A			X								
Arroyo Simi-FP	S	9 oz Jar	1		4 deg C	3A				X		X					
Arroyo Simi-FP	S	9 oz Jar	1		4 deg C	4A					x						
Arroyo Simi-FP	S	9 oz Jar	1	2-23-2012 11:30	4 deg C	5A							X	X			

Field readings:
Temp = 64 °F
pH = 7.5
DO = 13.11 mg
Conductivity = 2.07 ms/cm
Water Velocity (ft/sec) = 2/60 sec
Time of readings = 11:30

Comments

Keep sample in cooler in the dark until delivered to ABC Labs

Relinquished By	Date/Time	Received By	Date/Time
[signature]	2-23-2012 12:45	[signature]	2-23-12 12:45
[signature]	2-23-12 15:05		
[signature]		VanBant	2/23/12 15:05

Turn around Time: (check)
24 Hours _____ 5 Days _____
48 Hours _____ 10 Days _____
72 Hours _____ Normal X

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

Data Requirements: (check)
No Level IV ____ All Level IV ____
NPDES Level IV X On Ice: ✓ 5.7 °C

3/25/2012

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-3619-1

Login Number: 3619

List Source: TestAmerica Irvine

List Number: 1

Creator: Van Banh, Vu

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

APPENDIX G

Section 14

Arroyo Simi-Frontier Park – March 8, 2012

MECX Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-4962-1

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:	440-4962-1
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
Arroyo Simi-FP	440-4962-1	G2C100420-001	Water	3/8/2012 11:30:00 AM	200.7, 1613B, SM 2340B, SM 2540D, SM 9221F

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the samples were couriered to TestAmerica-Irvine, custody seals were not necessary. Custody seals were intact upon receipt at TestAmerica-West Sacramento. 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: April 19, 2012

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 OCDD, OCDF, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF and their totals, and reported detects below the EDL for 1,2,3,4,6,7,8-HpCDD and total HpCDD 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. Sample results for the individual isomer method blank contaminants were qualified as nondetected, "U," at the level of contamination. Total results for HxCDF and HpCDF were also qualified as nondetected, "U," as the peaks comprising the totals in the sample were present at comparable concentrations in the method blank. Total HpCDD was 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.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: This SDG had no identified field duplicate samples.

- Internal Standards Performance: The labeled 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 and totals containing EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Total HpCDD was qualified as estimated, "J," as the reportable total included an EMPC peak.

  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 200.7—Metals

Reviewed By: P. Meeks
Date Reviewed: April 17, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Method 200.7* and *Standard Method 2340D,* and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: Analytical holding times, six months for ICP metals, were met.

- Calibration: Calibration criteria were met. Initial and continuing calibration recoveries were within 90-110%. CRI recoveries affecting sample results were within the control limits of 70-130%.

- Blanks: Method blanks and CCBs had no detects.

- Interference Check Samples: Recoveries were within the method-established control limits. There were no target compounds present in the ICSA solution at concentrations indicative of matrix interference.

- 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.

- 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—e. Coli

Reviewed By: P. Meeks
Date Reviewed: April 17, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), Standard Method SM 9221F,* and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time is listed as immediate. As the sample was prepared within six hours, no qualifications were required.

- Calibration: The control results were acceptable.

- Blanks: Not applicable to this method.

- Blank Spikes and Laboratory Control Samples: Not applicable to this method.

- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: Not applicable to this method.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-“; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: There were no field duplicate samples identified for this SDG.

D. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks
Date Reviewed: April 17, 2012

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 SM 2340B* and *SM 2540D*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, 7 days for TSS, was met.
- Calibration: The balance calibration logs were acceptable.
- Blanks: The method blank had no detect.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to this method.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms 440-4962-1

Analysis Method 1613B

Sample Name Arroyo Simi-FP **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-4962-1 **Sample Date:** 3/8/2012 11:30:00 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	0.000050	0.0000023	ug/L	J Q B	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000050	0.0000020	ug/L	J Q B	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000050	0.0000032	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000050	0.0000023	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000050	0.0000015	ug/L	J Q B	U	B
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000050	0.0000019	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000050	0.0000013	ug/L	J B	U	B
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000050	0.0000018	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000050	0.0000019	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000050	0.0000037	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000050	0.0000051	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.000050	0.0000014	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000050	0.0000058	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.000010	0.0000027	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.000010	0.0000044	ug/L		U	
OCDD	3268-87-9	ND	0.00010	0.0000051	ug/L	J Q B	U	B
OCDF	39001-02-0	ND	0.00010	0.0000047	ug/L	J Q B	U	B
Total HpCDD	37871-00-4	0.000007	0.000050	0.0000023	ug/L	J Q B	J	B, DNQ, *III
Total HpCDF	38998-75-3	ND	0.000050	0.0000020	ug/L	J Q B	U	B
Total HxCDD	34465-46-8	ND	0.000050	0.0000018	ug/L		U	
Total HxCDF	55684-94-1	ND	0.000050	0.0000013	ug/L	J Q B	U	B
Total PeCDD	36088-22-9	ND	0.000050	0.0000037	ug/L		U	
Total PeCDF	30402-15-4	ND	0.000050	0.0000051	ug/L		U	
Total TCDD	41903-57-5	ND	0.000010	0.0000027	ug/L		U	
Total TCDF	55722-27-5	ND	0.000010	0.0000044	ug/L		U	

Analysis Method 200.7 Rev 4.4

Sample Name Arroyo Simi-FP **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-4962-1 **Sample Date:** 3/8/2012 11:30:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Calcium	7440-70-2	210	0.10	0.050	mg/L			
Magnesium	7439-95-4	66	0.020	0.012	mg/L			

Analysis Method SM 2340B

Sample Name Arroyo Simi-FP **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-4962-1 **Sample Date:** 3/8/2012 11:30:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness, as CaCO3	STL00009	800	0.33	0.17	mg/L			

Analysis Method SM 2540D

Sample Name Arroyo Simi-FP **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-4962-1 **Sample Date:** 3/8/2012 11:30:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	STL00161	62	10	10	mg/L			

Analysis Method SM 9221F

Sample Name Arroyo Simi-FP **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-4962-1 **Sample Date:** 3/8/2012 11:30:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	68586-22	300	2.0	2.0	MPN/10			

APPENDIX G

Section 15

Arroyo Simi-Frontier Park – March 8, 2012

Test America Analytical Laboratory Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-4962-1
Client Project/Site: Boeing SSFL
Revision: 1

For:
MWH Americas Inc
618 Michillinda Avenue, Suite 200
Arcadia, California 91007

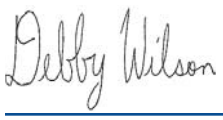
Attn: Bronwyn Kelly

Debby Wilson

Authorized for release by:
3/29/2012 5:05:31 PM

Debby Wilson
Project Manager I
debby.wilson@testamericainc.com

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



Debby Wilson
Project Manager I
3/29/2012 5:05:31 PM

Table of Contents

Sample Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL

TestAmerica Job ID: 440-4962-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-4962-1	Arroyo Simi-FP	Water	03/08/12 11:30	03/08/12 15:10

Job ID: 440-4962-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-4962-1

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

GC/MS Semi VOA
No analytical or quality issues were noted.

GC Semi VOA
Method(s) 608: The continuing calibration verification (CCV) fo Technical Chlordane associated with batch 12631 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

Biology
No analytical or quality issues were noted.

WATER, 1613B, Dioxins/Furans with Totals
Sample: 1
Some analytes in this sample and the associated method blank (MB) 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 in the MB 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.

Organic Prep
No analytical or quality issues were noted.

Client Sample ID: Arroyo Simi-FP
Date Collected: 03/08/12 11:30
Date Received: 03/08/12 15:10

Lab Sample ID: 440-4962-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		1.0	0.080	ug/L		03/09/12 09:59	03/09/12 14:13	1
Diazinon	ND		0.25	0.040	ug/L		03/09/12 09:59	03/09/12 14:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,3-Dimethyl-2-nitrobenzene	*98*		*70 - 130*	*03/09/12 09:59*	*03/09/12 14:13*	*1*
1,3-Dimethyl-2-nitrobenzene	*93*		*70 - 130*	*03/09/12 09:59*	*03/09/12 14:41*	*1*
Perylene-d12	*107*		*70 - 130*	*03/09/12 09:59*	*03/09/12 14:13*	*1*
Perylene-d12	*109*		*70 - 130*	*03/09/12 09:59*	*03/09/12 14:41*	*1*
Triphenylphosphate	*100*		*70 - 130*	*03/09/12 09:59*	*03/09/12 14:13*	*1*
Triphenylphosphate	*104*		*70 - 130*	*03/09/12 09:59*	*03/09/12 14:41*	*1*

Method: 608 - Organochlorine Pesticides in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.094	0.0075	ug/L		03/11/12 12:04	03/12/12 20:41	1
Dieldrin	ND		0.0047	0.0019	ug/L		03/11/12 12:04	03/12/12 20:41	1
Toxaphene	ND		0.47	0.24	ug/L		03/11/12 12:04	03/12/12 20:41	1
4,4'-DDD	ND		0.0047	0.0038	ug/L		03/11/12 12:04	03/12/12 20:41	1
4,4'-DDE	ND		0.0047	0.0028	ug/L		03/11/12 12:04	03/12/12 20:41	1
4,4'-DDT	ND		0.0094	0.0038	ug/L		03/11/12 12:04	03/12/12 20:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*67*		*35 - 115*	*03/11/12 12:04*	*03/12/12 20:41*	*1*

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.47	0.24	ug/L		03/11/12 12:04	03/12/12 16:39	1
Aroclor 1221	ND		0.47	0.24	ug/L		03/11/12 12:04	03/12/12 16:39	1
Aroclor 1232	ND		0.47	0.24	ug/L		03/11/12 12:04	03/12/12 16:39	1
Aroclor 1242	ND		0.47	0.24	ug/L		03/11/12 12:04	03/12/12 16:39	1
Aroclor 1248	ND		0.47	0.24	ug/L		03/11/12 12:04	03/12/12 16:39	1
Aroclor 1254	ND		0.47	0.24	ug/L		03/11/12 12:04	03/12/12 16:39	1
Aroclor 1260	ND		0.47	0.24	ug/L		03/11/12 12:04	03/12/12 16:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*75*		*45 - 120*	*03/11/12 12:04*	*03/12/12 16:39*	*1*

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000027	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
Total TCDD	ND		0.000010	0.0000027	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
1,2,3,7,8-PeCDD	ND		0.000050	0.0000037	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
Total PeCDD	ND		0.000050	0.0000037	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000023	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
1,2,3,6,7,8-HxCDD	ND		0.000050	0.0000019	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
1,2,3,7,8,9-HxCDD	ND		0.000050	0.0000018	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
Total HxCDD	ND		0.000050	0.0000018	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
1,2,3,4,6,7,8-HpCDD	**0.0000031**	**J Q B**	0.000050	0.0000023	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
Total HpCDD	**0.0000074**	**J Q B**	0.000050	0.0000023	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
OCDD	**0.000027**	**J Q B**	0.00010	0.0000051	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
2,3,7,8-TCDF	ND		0.000010	0.0000044	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
Total TCDF	ND		0.000010	0.0000044	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
1,2,3,7,8-PeCDF	ND		0.000050	0.0000051	ug/L		03/22/12 09:00	03/24/12 01:42	0.96

Client Sample ID: Arroyo Simi-FP
Date Collected: 03/08/12 11:30
Date Received: 03/08/12 15:10

Lab Sample ID: 440-4962-1
Matrix: Water

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

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,7,8-PeCDF	ND		0.000050	0.0000058	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
Total PeCDF	ND		0.000050	0.0000051	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
1,2,3,4,7,8-HxCDF	**0.0000030**	**J Q B**	0.000050	0.0000015	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
1,2,3,6,7,8-HxCDF	**0.0000017**	**J B**	0.000050	0.0000013	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
2,3,4,6,7,8-HxCDF	ND		0.000050	0.0000014	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
1,2,3,7,8,9-HxCDF	ND		0.000050	0.0000019	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
Total HxCDF	**0.0000063**	**J Q B**	0.000050	0.0000013	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
1,2,3,4,6,7,8-HpCDF	**0.0000026**	**J Q B**	0.000050	0.0000020	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.0000032	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
Total HpCDF	**0.0000042**	**J Q B**	0.000050	0.0000020	ug/L		03/22/12 09:00	03/24/12 01:42	0.96
OCDF	**0.0000063**	**J Q B**	0.00010	0.0000047	ug/L		03/22/12 09:00	03/24/12 01:42	0.96

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*97*		*35 - 197*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*

Internal Standard	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*59*		*25 - 164*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-1,2,3,7,8-PeCDD	*60*		*25 - 181*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-1,2,3,4,7,8-HxCDD	*51*		*32 - 141*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-1,2,3,6,7,8-HxCDD	*59*		*28 - 130*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-1,2,3,4,6,7,8-HpCDD	*54*		*23 - 140*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-OCDD	*52*		*17 - 157*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-1,2,3,7,8-PeCDF	*59*		*24 - 185*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-2,3,4,7,8-PeCDF	*58*		*21 - 178*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-1,2,3,6,7,8-HxCDF	*66*		*26 - 123*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-2,3,4,6,7,8-HxCDF	*65*		*28 - 136*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-1,2,3,7,8,9-HxCDF	*66*		*29 - 147*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-1,2,3,4,6,7,8-HpCDF	*54*		*28 - 143*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-1,2,3,4,7,8,9-HpCDF	*53*		*26 - 138*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*
13C-1,2,3,4,7,8-HxCDF	*56*		*26 - 152*	*03/22/12 09:00*	*03/24/12 01:42*	*0.96*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**210**		0.10	0.050	mg/L		03/12/12 09:36	03/12/12 16:00	1
Magnesium	**66**		0.020	0.012	mg/L		03/12/12 09:36	03/12/12 16:00	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	**800**		0.33	0.17	mg/L			03/16/12 13:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**62**		10	10	mg/L			03/09/12 22:52	1

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

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	**300**				MPN/100mL			03/08/12 15:16	1

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

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	**300**		2.0	2.0	MPN/100mL			03/08/12 15:16	1

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Boeing SSFL

TestAmerica Job ID: 440-4962-1

Client Sample ID: Arroyo Simi-FP

Lab Sample ID: 440-4962-1

Date Collected: 03/08/12 11:30

Matrix: Water

Date Received: 03/08/12 15:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	525.2			1000 mL	1 mL	12208	03/09/12 09:59	JM	TAL IRV
Total/NA	Analysis	525.2		1			12210	03/09/12 14:41	JM	TAL IRV
Total/NA	Prep	525.2			1000 mL	1 mL	12208	03/09/12 09:59	JM	TAL IRV
Total/NA	Analysis	525.2		1			12210	03/09/12 14:13	JM	TAL IRV
Total/NA	Prep	608			1060 mL	2 mL	12494	03/11/12 12:04	AB	TAL IRV
Total/NA	Analysis	608		1			12587	03/12/12 16:39	DD	TAL IRV
Total/NA	Analysis	608		1			12631	03/12/12 20:41	DD	TAL IRV
Total	Prep	3542			1035.81 mL	20 uL	2082072_P	03/22/12 09:00	BG	TAL WSC
Total	Analysis	1613B		0.96			2082072	03/24/12 01:42	LLH	TAL WSC
Total Recoverable	Prep	200.2			50 mL	50 mL	12575	03/12/12 09:36	EN	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			12704	03/12/12 16:00	VS	TAL IRV
Total/NA	Analysis	SM 2340B		1			13726	03/16/12 13:11	FR	TAL IRV
Total/NA	Analysis	SM 2540D		1	100 mL	100 mL	12374	03/09/12 22:52	DK	TAL IRV
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	12236		AK	TAL IRV
							(Start)	03/08/12 15:16		
							(End)	03/11/12 12:55		
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	12237		AK	TAL IRV
							(Start)	03/08/12 15:16		
							(End)	03/11/12 12:55		

Laboratory References:

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

TAL WSC = TestAmerica West Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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

Lab Sample ID: MB 440-12208/1-A
Matrix: Water
Analysis Batch: 12210

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 12208

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		1.0	0.080	ug/L		03/09/12 09:59	03/09/12 11:56	1
Diazinon	ND		0.25	0.040	ug/L		03/09/12 09:59	03/09/12 11:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,3-Dimethyl-2-nitrobenzene	*85*		*70 - 130*	*03/09/12 09:59*	*03/09/12 11:56*	*1*
Perylene-d12	*102*		*70 - 130*	*03/09/12 09:59*	*03/09/12 11:56*	*1*
Triphenylphosphate	*99*		*70 - 130*	*03/09/12 09:59*	*03/09/12 11:56*	*1*

Lab Sample ID: LCS 440-12208/2-A
Matrix: Water
Analysis Batch: 12210

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 12208

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorpyrifos			5.00	5.65		ug/L		113	70 - 130		
Diazinon			5.00	5.16		ug/L		103	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,3-Dimethyl-2-nitrobenzene	*90*		*70 - 130*
Perylene-d12	*106*		*70 - 130*
Triphenylphosphate	*103*		*70 - 130*

Lab Sample ID: LCSD 440-12208/3-A
Matrix: Water
Analysis Batch: 12210

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 12208

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorpyrifos			5.00	5.57		ug/L		111	70 - 130	1	30
Diazinon			5.00	4.92		ug/L		98	70 - 130	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,3-Dimethyl-2-nitrobenzene	*100*		*70 - 130*
Perylene-d12	*102*		*70 - 130*
Triphenylphosphate	*101*		*70 - 130*

Method: 608 - Organochlorine Pesticides in Water

Lab Sample ID: MB 440-12494/1-A
Matrix: Water
Analysis Batch: 12631

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 12494

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.10	0.0080	ug/L		03/11/12 12:04	03/12/12 17:24	1
Dieldrin	ND		0.0050	0.0020	ug/L		03/11/12 12:04	03/12/12 17:24	1
Toxaphene	ND		0.50	0.25	ug/L		03/11/12 12:04	03/12/12 17:24	1
4,4'-DDD	ND		0.0050	0.0040	ug/L		03/11/12 12:04	03/12/12 17:24	1
4,4'-DDE	ND		0.0050	0.0030	ug/L		03/11/12 12:04	03/12/12 17:24	1
4,4'-DDT	ND		0.010	0.0040	ug/L		03/11/12 12:04	03/12/12 17:24	1

Method: 608 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: MB 440-12494/1-A
Matrix: Water
Analysis Batch: 12631

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 12494

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	76		35 - 115	03/11/12 12:04	03/12/12 17:24	1

Lab Sample ID: LCS 440-12494/2-A
Matrix: Water
Analysis Batch: 12631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 12494

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dieldrin	0.500	0.510		ug/L		102	55 - 115
4,4'-DDD	0.500	0.509		ug/L		102	55 - 120
4,4'-DDE	0.500	0.508		ug/L		102	50 - 120
4,4'-DDT	0.500	0.545		ug/L		109	55 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	76		35 - 115

Lab Sample ID: 440-4772-A-1-A MSD
Matrix: Water
Analysis Batch: 12631

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 12494

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dieldrin	ND		0.510	0.432		ug/L		85	50 - 120	2	30
4,4'-DDD	ND		0.510	0.431		ug/L		84	50 - 125	3	30
4,4'-DDE	ND		0.510	0.428		ug/L		84	45 - 125	3	30
4,4'-DDT	ND		0.510	0.444		ug/L		87	50 - 125	4	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Tetrachloro-m-xylene	51		35 - 115

Lab Sample ID: 440-4772-B-1-A MS
Matrix: Water
Analysis Batch: 12631

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 12494

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dieldrin	ND		0.510	0.442		ug/L		87	50 - 120
4,4'-DDD	ND		0.510	0.444		ug/L		87	50 - 125
4,4'-DDE	ND		0.510	0.442		ug/L		87	45 - 125
4,4'-DDT	ND		0.510	0.463		ug/L		91	50 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
Tetrachloro-m-xylene	56		35 - 115

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 440-12494/1-A
Matrix: Water
Analysis Batch: 12587

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 12494

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.50	0.25	ug/L		03/11/12 12:04	03/12/12 15:21	1
Aroclor 1221	ND		0.50	0.25	ug/L		03/11/12 12:04	03/12/12 15:21	1
Aroclor 1232	ND		0.50	0.25	ug/L		03/11/12 12:04	03/12/12 15:21	1
Aroclor 1242	ND		0.50	0.25	ug/L		03/11/12 12:04	03/12/12 15:21	1
Aroclor 1248	ND		0.50	0.25	ug/L		03/11/12 12:04	03/12/12 15:21	1
Aroclor 1254	ND		0.50	0.25	ug/L		03/11/12 12:04	03/12/12 15:21	1
Aroclor 1260	ND		0.50	0.25	ug/L		03/11/12 12:04	03/12/12 15:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*88*		*45 - 120*	*03/11/12 12:04*	*03/12/12 15:21*	*1*

Lab Sample ID: LCS 440-12494/5-A
Matrix: Water
Analysis Batch: 12587

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 12494

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Aroclor 1016			4.00	3.11		ug/L		78	50 - 115		
Aroclor 1260			4.00	3.19		ug/L		80	60 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*82*		*45 - 120*

Lab Sample ID: 440-4772-A-1-B MS
Matrix: Water
Analysis Batch: 12587

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 12494

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Aroclor 1016	ND		4.08	2.67		ug/L		65	45 - 120		
Aroclor 1260	ND		4.08	2.88		ug/L		71	55 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*73*		*45 - 120*

Lab Sample ID: 440-4772-B-1-B MSD
Matrix: Water
Analysis Batch: 12587

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 12494

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	ND		4.08	2.79		ug/L		68	45 - 120	5	30
Aroclor 1260	ND		4.08	3.25		ug/L		80	55 - 125	12	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*82*		*45 - 120*

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

Lab Sample ID: G2C220000072B
Matrix: Water
Analysis Batch: 2082072

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 2082072_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000044	ug/L		03/22/12 09:00	03/24/12 00:13	1
Total TCDD	ND		0.000010	0.0000044	ug/L		03/22/12 09:00	03/24/12 00:13	1
1,2,3,7,8-PeCDD	ND		0.000050	0.0000056	ug/L		03/22/12 09:00	03/24/12 00:13	1
Total PeCDD	ND		0.000050	0.0000056	ug/L		03/22/12 09:00	03/24/12 00:13	1
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000028	ug/L		03/22/12 09:00	03/24/12 00:13	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.0000024	ug/L		03/22/12 09:00	03/24/12 00:13	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.0000022	ug/L		03/22/12 09:00	03/24/12 00:13	1
Total HxCDD	ND		0.000050	0.0000022	ug/L		03/22/12 09:00	03/24/12 00:13	1
1,2,3,4,6,7,8-HpCDD	0.0000051	J Q	0.000050	0.0000052	ug/L		03/22/12 09:00	03/24/12 00:13	1
Total HpCDD	0.0000051	J Q	0.000050	0.0000052	ug/L		03/22/12 09:00	03/24/12 00:13	1
OCDD	0.000046	J	0.00010	0.0000062	ug/L		03/22/12 09:00	03/24/12 00:13	1
2,3,7,8-TCDF	ND		0.000010	0.0000085	ug/L		03/22/12 09:00	03/24/12 00:13	1
Total TCDF	ND		0.000010	0.0000085	ug/L		03/22/12 09:00	03/24/12 00:13	1
1,2,3,7,8-PeCDF	ND		0.000050	0.0000076	ug/L		03/22/12 09:00	03/24/12 00:13	1
2,3,4,7,8-PeCDF	ND		0.000050	0.0000082	ug/L		03/22/12 09:00	03/24/12 00:13	1
Total PeCDF	ND		0.000050	0.0000076	ug/L		03/22/12 09:00	03/24/12 00:13	1
1,2,3,4,7,8-HxCDF	0.0000088	J	0.000050	0.0000025	ug/L		03/22/12 09:00	03/24/12 00:13	1
1,2,3,6,7,8-HxCDF	0.0000030	J Q	0.000050	0.0000022	ug/L		03/22/12 09:00	03/24/12 00:13	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.0000023	ug/L		03/22/12 09:00	03/24/12 00:13	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.0000032	ug/L		03/22/12 09:00	03/24/12 00:13	1
Total HxCDF	0.000018	J Q	0.000050	0.0000022	ug/L		03/22/12 09:00	03/24/12 00:13	1
1,2,3,4,6,7,8-HpCDF	0.0000076	J Q	0.000050	0.0000031	ug/L		03/22/12 09:00	03/24/12 00:13	1
1,2,3,4,7,8,9-HpCDF	0.0000053	J	0.000050	0.0000044	ug/L		03/22/12 09:00	03/24/12 00:13	1
Total HpCDF	0.000018	J Q	0.000050	0.0000031	ug/L		03/22/12 09:00	03/24/12 00:13	1
OCDF	0.000015	J	0.00010	0.0000071	ug/L		03/22/12 09:00	03/24/12 00:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*92*		*35 - 197*	*03/22/12 09:00*	*03/24/12 00:13*	*1*

Internal Standard	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*44*		*25 - 164*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-1,2,3,7,8-PeCDD	*48*		*25 - 181*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-1,2,3,4,7,8-HxCDD	*45*		*32 - 141*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-1,2,3,6,7,8-HxCDD	*50*		*28 - 130*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*43*		*23 - 140*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-OCDD	*43*		*17 - 157*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-2,3,7,8-TCDF	*45*		*24 - 169*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-1,2,3,7,8-PeCDF	*47*		*24 - 185*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-2,3,4,7,8-PeCDF	*49*		*21 - 178*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-1,2,3,6,7,8-HxCDF	*54*		*26 - 123*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-2,3,4,6,7,8-HxCDF	*51*		*28 - 136*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-1,2,3,7,8,9-HxCDF	*51*		*29 - 147*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*43*		*28 - 143*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*44*		*26 - 138*	*03/22/12 09:00*	*03/24/12 00:13*	*1*
13C-1,2,3,4,7,8-HxCDF	*46*		*26 - 152*	*03/22/12 09:00*	*03/24/12 00:13*	*1*

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

Lab Sample ID: G2C220000072C
Matrix: Water
Analysis Batch: 2082072

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 2082072_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	0.000200	0.000223		ug/L		111	67 - 158
1,2,3,7,8-PeCDD	0.00100	0.00112		ug/L		112	70 - 142
1,2,3,4,7,8-HxCDD	0.00100	0.00113		ug/L		113	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00105		ug/L		105	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.00118		ug/L		118	64 - 162
1,2,3,4,6,7,8-HpCDD	0.00100	0.00108	B	ug/L		108	70 - 140
OCDD	0.00200	0.00236	B	ug/L		118	78 - 144
2,3,7,8-TCDF	0.000200	0.000220		ug/L		110	75 - 158
1,2,3,7,8-PeCDF	0.00100	0.00113		ug/L		113	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.00116		ug/L		116	68 - 160
1,2,3,4,7,8-HxCDF	0.00100	0.00113	B	ug/L		113	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.00114	B	ug/L		114	84 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.00113		ug/L		113	70 - 156
1,2,3,7,8,9-HxCDF	0.00100	0.00116		ug/L		116	78 - 130
1,2,3,4,6,7,8-HpCDF	0.00100	0.00114	B	ug/L		114	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.00115	B	ug/L		115	78 - 138
OCDF	0.00200	0.00260	B	ug/L		130	63 - 170

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*97*		*31 - 191*

Internal Standard	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*54*		*20 - 175*
13C-1,2,3,7,8-PeCDD	*56*		*21 - 227*
13C-1,2,3,4,7,8-HxCDD	*49*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*59*		*25 - 163*
13C-1,2,3,4,6,7,8-HpCDD	*47*		*26 - 166*
13C-OCDD	*49*		*13 - 199*
13C-2,3,7,8-TCDF	*55*		*22 - 152*
13C-1,2,3,7,8-PeCDF	*56*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*57*		*13 - 328*
13C-1,2,3,6,7,8-HxCDF	*62*		*21 - 159*
13C-2,3,4,6,7,8-HxCDF	*63*		*22 - 176*
13C-1,2,3,7,8,9-HxCDF	*61*		*17 - 205*
13C-1,2,3,4,6,7,8-HpCDF	*51*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*49*		*20 - 186*
13C-1,2,3,4,7,8-HxCDF	*53*		*19 - 202*

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 440-12575/1-A
Matrix: Water
Analysis Batch: 12704

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 12575

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.10	0.050	mg/L		03/12/12 09:36	03/12/12 15:21	1
Magnesium	ND		0.020	0.012	mg/L		03/12/12 09:36	03/12/12 15:21	1

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

Lab Sample ID: LCS 440-12575/2-A
Matrix: Water
Analysis Batch: 12704

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 12575

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	2.50	2.50		mg/L		100	85 - 115
Magnesium	2.50	2.44		mg/L		97	85 - 115

Lab Sample ID: 440-4512-B-2-B MS
Matrix: Water
Analysis Batch: 12704

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 12575

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	49		2.50	54.5	BB	mg/L		211	70 - 130
Magnesium	12		2.50	14.7	BB	mg/L		115	70 - 130

Lab Sample ID: 440-4512-B-2-C MSD
Matrix: Water
Analysis Batch: 12704

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 12575

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	49		2.50	53.2	BB	mg/L		160	70 - 130	2	20
Magnesium	12		2.50	14.0	BB	mg/L		90	70 - 130	4	20

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

Lab Sample ID: MB 440-12374/1
Matrix: Water
Analysis Batch: 12374

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		10	10	mg/L			03/09/12 22:52	1

Lab Sample ID: LCS 440-12374/2
Matrix: Water
Analysis Batch: 12374

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	1000	989		mg/L		99	85 - 115

Lab Sample ID: 440-4898-A-1 DU
Matrix: Water
Analysis Batch: 12374

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	12		11.0		mg/L		9	10

GC/MS Semi VOA

Prep Batch: 12208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4962-1	Arroyo Simi-FP	Total/NA	Water	525.2	
440-4962-1	Arroyo Simi-FP	Total/NA	Water	525.2	
LCS 440-12208/2-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 440-12208/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MB 440-12208/1-A	Method Blank	Total/NA	Water	525.2	

Analysis Batch: 12210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4962-1	Arroyo Simi-FP	Total/NA	Water	525.2	12208
440-4962-1	Arroyo Simi-FP	Total/NA	Water	525.2	12208
LCS 440-12208/2-A	Lab Control Sample	Total/NA	Water	525.2	12208
LCSD 440-12208/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	12208
MB 440-12208/1-A	Method Blank	Total/NA	Water	525.2	12208

GC Semi VOA

Prep Batch: 12494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4772-A-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	608	
440-4772-A-1-B MS	Matrix Spike	Total/NA	Water	608	
440-4772-B-1-A MS	Matrix Spike	Total/NA	Water	608	
440-4772-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	608	
440-4962-1	Arroyo Simi-FP	Total/NA	Water	608	
LCS 440-12494/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-12494/5-A	Lab Control Sample	Total/NA	Water	608	
MB 440-12494/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 12587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4772-A-1-B MS	Matrix Spike	Total/NA	Water	608	12494
440-4772-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	608	12494
440-4962-1	Arroyo Simi-FP	Total/NA	Water	608	12494
LCS 440-12494/5-A	Lab Control Sample	Total/NA	Water	608	12494
MB 440-12494/1-A	Method Blank	Total/NA	Water	608	12494

Analysis Batch: 12631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4772-A-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	608	12494
440-4772-B-1-A MS	Matrix Spike	Total/NA	Water	608	12494
440-4962-1	Arroyo Simi-FP	Total/NA	Water	608	12494
LCS 440-12494/2-A	Lab Control Sample	Total/NA	Water	608	12494
MB 440-12494/1-A	Method Blank	Total/NA	Water	608	12494

Specialty Organics

Analysis Batch: 2082072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4962-1	Arroyo Simi-FP	Total	Water	1613B	
G2C220000072B	Method Blank	Total	Water	1613B	
G2C220000072C	Lab Control Sample	Total	Water	1613B	

Specialty Organics (Continued)

Prep Batch: 2082072_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4962-1	Arroyo Simi-FP	Total	Water	3542	
G2C220000072B	Method Blank	Total	Water	3542	
G2C220000072C	Lab Control Sample	Total	Water	3542	

Metals

Prep Batch: 12575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4512-B-2-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-4512-B-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
440-4962-1	Arroyo Simi-FP	Total Recoverable	Water	200.2	
LCS 440-12575/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-12575/1-A	Method Blank	Total Recoverable	Water	200.2	

Analysis Batch: 12704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4512-B-2-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	12575
440-4512-B-2-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	12575
440-4962-1	Arroyo Simi-FP	Total Recoverable	Water	200.7 Rev 4.4	12575
LCS 440-12575/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	12575
MB 440-12575/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	12575

Analysis Batch: 13726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4962-1	Arroyo Simi-FP	Total/NA	Water	SM 2340B	

General Chemistry

Analysis Batch: 12374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4898-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	
440-4962-1	Arroyo Simi-FP	Total/NA	Water	SM 2540D	
LCS 440-12374/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-12374/1	Method Blank	Total/NA	Water	SM 2540D	

Biology

Analysis Batch: 12236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4962-1	Arroyo Simi-FP	Total/NA	Water	SM 9221E	

Analysis Batch: 12237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-4962-1	Arroyo Simi-FP	Total/NA	Water	SM 9221F	

Qualifiers

DIOXIN

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

Metals

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL

TestAmerica Job ID: 440-4962-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Irvine	Arizona	State Program	9	AZ0671
TestAmerica Irvine	California	LA Cty Sanitation Districts	9	10256
TestAmerica Irvine	California	NELAC	9	1108CA
TestAmerica Irvine	California	State Program	9	2706
TestAmerica Irvine	Guam	State Program	9	Cert. No. 10.001r
TestAmerica Irvine	Hawaii	State Program	9	N/A
TestAmerica Irvine	Nevada	State Program	9	CA015312007A
TestAmerica Irvine	New Mexico	State Program	6	N/A
TestAmerica Irvine	Northern Mariana Islands	State Program	9	MP0002
TestAmerica Irvine	Oregon	NELAC	10	4005
TestAmerica Irvine	USDA	Federal		P330-09-00080
TestAmerica West Sacramento	A2LA	A2LA		MP0007
TestAmerica West Sacramento	A2LA	A2LA		MP0007
TestAmerica West Sacramento	A2LA	DoD ELAP		2928-01
TestAmerica West Sacramento	Alaska (UST)	State Program	10	UST-055
TestAmerica West Sacramento	Arizona	State Program	9	AZ0708
TestAmerica West Sacramento	Arkansas DEQ	State Program	6	88-0691
TestAmerica West Sacramento	California	NELAC	9	1119CA
TestAmerica West Sacramento	California	NELAC Primary AB	9	MP0007
TestAmerica West Sacramento	Colorado	State Program	8	N/A
TestAmerica West Sacramento	Connecticut	State Program	1	PH-0691
TestAmerica West Sacramento	Florida	NELAC	4	E87570
TestAmerica West Sacramento	Georgia	State Program	4	960
TestAmerica West Sacramento	Guam	State Program	9	N/A
TestAmerica West Sacramento	Hawaii	State Program	9	N/A
TestAmerica West Sacramento	Illinois	NELAC	5	200060
TestAmerica West Sacramento	Kansas	NELAC	7	E-10375
TestAmerica West Sacramento	Louisiana	NELAC	6	30612
TestAmerica West Sacramento	Michigan	State Program	5	9947
TestAmerica West Sacramento	Nevada	State Program	9	CA44
TestAmerica West Sacramento	New Jersey	NELAC	2	CA005
TestAmerica West Sacramento	New Mexico	State Program	6	N/A
TestAmerica West Sacramento	New York	NELAC	2	11666
TestAmerica West Sacramento	Northern Mariana Islands	State Program	9	MP0007
TestAmerica West Sacramento	Oregon	NELAC	10	CA200005
TestAmerica West Sacramento	Pennsylvania	NELAC	3	68-01272
TestAmerica West Sacramento	South Carolina	State Program	4	87014
TestAmerica West Sacramento	Texas	NELAC	6	T104704399-08-TX
TestAmerica West Sacramento	US Fish & Wildlife	Federal		LE148388-0
TestAmerica West Sacramento	USDA	Federal		P330-09-00055
TestAmerica West Sacramento	Utah	NELAC	8	QUAN1
TestAmerica West Sacramento	Virginia	State Program	3	178
TestAmerica West Sacramento	Washington	State Program	10	C581
TestAmerica West Sacramento	West Virginia	State Program	3	9930C
TestAmerica West Sacramento	West Virginia DEP	State Program	3	334
TestAmerica West Sacramento	Wisconsin	State Program	5	998204680
TestAmerica West Sacramento	Wyoming	State Program	8	8TMS-Q

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

440-4462

Test America Version 7/19/2010 CHAIN OF CUSTODY FORM

Client Name/Address: MWH-Arcadia 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Project: Boeing-SSFL NPDES Annual Arroyo Simi-Frontier Park
Project Manager: Bronwyn Kelly Sampler: Rick BANAGA	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Hardness as $CaCO_3$	PCBs (608)	Chlorpyrifos, Diazinon (525.2)	Chlordane, Dieldrin, Toxaphene (608), 4,4-DDD, 4,4-DDE, 4,4-DDT	TSS	TCDD (and all cogeners)	Fecal coliform (SM9223)	E. coli (SM9223)	Field readings / Comments
Arroyo Simi-FP	W	1L Poly	1	3-8-2012 11:30	HNO_3	1	X								
Arroyo Simi-FP	W	1L Amber	2		None	2A, 2B		X							
Arroyo Simi-FP	W	1L Amber	2		HCl	3A, 3B			X						Extract within 36-Hours of sampling
Arroyo Simi-FP	W	1L Amber	2		None	4A, 4B				X					
Arroyo Simi-FP	W	500 mL Poly	1		None	5					X				
Arroyo Simi-FP	W	1L Amber	2		None	6A, 6B						X			
Arroyo Simi-FP	W	125 mL Poly	1		Na2S2O3	7							X		
Arroyo Simi-FP	W	125 mL Poly	1	3-8-2012 11:30	Na2S2O3	8								X	

Field readings:
Temp = 63°
pH = 7.7
Water Velocity (Ft/second) = FT. 1/60 SEC.
Time of readings = 11:30

Relinquished By	Date/Time: 3-8-2012 13:00	Received By	Date/Time: 3-8-12 13:00
Relinquished By	Date/Time: 3-8-12 15:10	Received By	Date/Time:
Relinquished By	Date/Time:	Received By	Date/Time: 3-8-12 1510

Turn around Time: (check)
24 Hours _____ 5 Days _____
48 Hours _____ 10 Days _____
72 Hours _____ Normal X

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

Data Requirements: (check)
No Level IV ____ All Level IV X

NPDES Level IV ____

23

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-4962-1

Login Number: 4962

List Source: TestAmerica Irvine

List Number: 1

Creator: Hulsey, Kenneth

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

APPENDIX G

Section 16

Arroyo Simi-Frontier Park – March 17, 2012

MECX Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-5815-1

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:	440-5815-1
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
Arroyo Simi FP	440-5815-1	N/A	Water	3/17/2012 11:50:00 AM	SM 9221E, SM 9221F

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the samples were couriered to TestAmerica-Irvine, no custody seals were required. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

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

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. VARIOUS EPA METHODS—e. Coli and Fecal Coliform

Reviewed By: P. Meeks
Date Reviewed: April 17, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), Standard Method SM 9221E* and *SM 9221F,* and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time is listed as immediate. As the sample was prepared within six hours, no qualifications were required.

- Calibration: The control results were acceptable.

- Blanks: Not applicable to this method.

- Blank Spikes and Laboratory Control Samples: Not applicable to this method.

- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: Not applicable to this method.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms 440-5815-1

Analysis Method SM 9221E

Sample Name Arroyo Simi FP **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-5815-1 **Sample Date:** 3/17/2012 11:50:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Coliform, Fecal	STL00002	>=1600			MPN/10			

Analysis Method SM 9221F

Sample Name Arroyo Simi FP **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-5815-1 **Sample Date:** 3/17/2012 11:50:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	68586-22	>=1600	2.0	2.0	MPN/10			

APPENDIX G

Section 17

Arroyo Simi-Frontier Park – March 17, 2012

Test America Analytical Laboratory Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-5815-1
Client Project/Site: Boeing SSFL NPDES

For:
MWH Americas Inc
618 Michillinda Avenue, Suite 200
Arcadia, California 91007

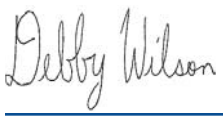
Attn: Bronwyn Kelly

Debby Wilson

Authorized for release by:
4/2/2012 3:44:02 PM

Debby Wilson
Project Manager I
debby.wilson@testamericainc.com

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



Debby Wilson
Project Manager I
4/2/2012 3:44:02 PM

Table of Contents

Sample Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL NPDES

TestAmerica Job ID: 440-5815-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-5815-1	Arroyo Simi FP	Water	03/17/12 11:50	03/17/12 14:40

Client Sample Results

Client: MWH Americas Inc
Project/Site: Boeing SSFL NPDES

TestAmerica Job ID: 440-5815-1

Client Sample ID: Arroyo Simi FP
Date Collected: 03/17/12 11:50
Date Received: 03/17/12 14:40

Lab Sample ID: 440-5815-1
Matrix: Water

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

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	>=1600				MPN/100mL			03/17/12 15:34	1

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

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	>=1600		2.0	2.0	MPN/100mL			03/17/12 15:34	1

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Boeing SSFL NPDES

TestAmerica Job ID: 440-5815-1

Client Sample ID: Arroyo Simi FP
Date Collected: 03/17/12 11:50
Date Received: 03/17/12 14:40

Lab Sample ID: 440-5815-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	13970		ST	TAL IRV
								(Start) 03/17/12 15:34		
								(End) 03/20/12 13:54		
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	13971		ST	TAL IRV
								(Start) 03/17/12 15:34		
								(End) 03/20/12 13:54		

Laboratory References:

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

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

Biology

Analysis Batch: 13970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-5815-1	Arroyo Simi FP	Total/NA	Water	SM 9221E	

Analysis Batch: 13971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-5815-1	Arroyo Simi FP	Total/NA	Water	SM 9221F	

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL NPDES

TestAmerica Job ID: 440-5815-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Irvine	Arizona	State Program	9	AZ0671
TestAmerica Irvine	California	LA Cty Sanitation Districts	9	10256
TestAmerica Irvine	California	NELAC	9	1108CA
TestAmerica Irvine	California	State Program	9	2706
TestAmerica Irvine	Guam	State Program	9	Cert. No. 10.001r
TestAmerica Irvine	Hawaii	State Program	9	N/A
TestAmerica Irvine	Nevada	State Program	9	CA015312007A
TestAmerica Irvine	New Mexico	State Program	6	N/A
TestAmerica Irvine	Northern Mariana Islands	State Program	9	MP0002
TestAmerica Irvine	Oregon	NELAC	10	4005
TestAmerica Irvine	USDA	Federal		P330-09-00080

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

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

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

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

Client:	TestAmerica Irvine 17461 Derian Avenue Suite 100 Irvine , CA 92614	**EMSL Order ID:**	371204388
		Date Received:	3/20/2012
		Date Analyzed:	3/21/2012
Attn.		**Date Reported:**	3/23/2012
Project:	**Boeing SSFL NPDES/44002624**	**Date Amended:**	

Real-Time PCR Analysis for Human *Bacteroides*

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

Lab Sample Number	Client Sample ID	Location	Amount Received	Amount Sampled	CEs /100 mL
4388-1	Arroyo Simi FP(440-5815-1)		Water 250 ml	Water 250 ml	None Detected

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

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

USEPA License No: 0240-02

Quanyi "Charlie" Li, Ph.D.

Director, PCR and DNA Analysis Lab

Page 1 of 1

Test America Version ~~3/16/2011~~ 7/19/2010

CHAIN OF CUSTODY FORM

1440-5815

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES Simi Arroyo Frontier Park
Project Manager: Bronwyn Kelly Sampler: Rick BANAGO	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Fecal coliform (SM9221)	E. coli (SM9221)	MST-Bateriodales, Human											Comments
Arroyo Simi FP	W	125 mL Poly	1	3-17-2012 11:50	Na2S2O3	1	X													
Arroyo Sximi FP	W	125 mL Poly	1	"	Na2S2O3	2		X												
Arroyo Simi FP	W	125 mL Poly	1	3-17-2012 11:50	None	3			X											Deliver to lab ASAP

ANALYSIS REQUIRED

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

Temp °F =

pH =

Time of readings =

Relinquished By	Date/Time:	Received By	Date/Time:
[signature]	3-17-2012 1235	[signature]	3-17-12 1235
[signature]	3-17-12 1440		
		[signature]	03/17/12 14:40

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

Sample Integrity: (Check)
Intact: X On Ice: ✓ 2.4°C

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

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-5815-1

Login Number: 5815

List Source: TestAmerica Irvine

List Number: 1

Creator: Perez, Angel

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

APPENDIX G

Section 18

Arroyo Simi-Frontier Park – March 27, 2012

MECX Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-6739-1

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:	440-6739-1
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
Arroyo Simi-FP	440-6739-1	N/A	Water	3/27/2012 1:15:00 PM	SM 9221E, SM 9221F

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the samples were couriered to the laboratory, custody seals were not necessary. 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. VARIOUS EPA METHODS—Fecal Coliform and e. Coli

Reviewed By: P. Meeks
Date Reviewed: April 17, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0), Standard Method SM 9221E* and *SM 9221F,* and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time is listed as immediate. As the sample was prepared within six hours, no qualifications were required.

- Calibration: The control results were acceptable.

- Blanks: Not applicable to this method.

- Blank Spikes and Laboratory Control Samples: Not applicable to this method.

- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: Not applicable to this method.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms 440-6739-1

Analysis Method SM 9221E

Sample Name Arroyo Simi-FP **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-6739-1 **Sample Date:** 3/27/2012 1:15:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Coliform, Fecal	STL00002	1600			MPN/10			

Analysis Method SM 9221F

Sample Name Arroyo Simi-FP **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-6739-1 **Sample Date:** 3/27/2012 1:15:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	68586-22	1600	2.0	2.0	MPN/10			

APPENDIX G

Section 19

Arroyo Simi-Frontier Park – March 27, 2012

Test America Analytical Laboratory Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-6739-1
Client Project/Site: Boeing SSFL NPDES

For:
MWH Americas Inc
618 Michillinda Avenue, Suite 200
Arcadia, California 91007

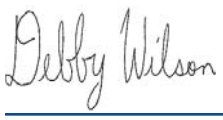
Attn: Bronwyn Kelly

Debby Wilson

Authorized for release by:
4/11/2012 9:28:34 AM

Debby Wilson
Project Manager I
debby.wilson@testamericainc.com

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



Debby Wilson
Project Manager I
4/11/2012 9:28:34 AM

Table of Contents

Sample Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL NPDES

TestAmerica Job ID: 440-6739-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-6739-1	Arroyo Simi-FP	Water	03/27/12 13:15	03/27/12 18:45

Client Sample Results

Client: MWH Americas Inc
Project/Site: Boeing SSFL NPDES

TestAmerica Job ID: 440-6739-1

Client Sample ID: Arroyo Simi-FP
Date Collected: 03/27/12 13:15
Date Received: 03/27/12 18:45

Lab Sample ID: 440-6739-1
Matrix: Water

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

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	1600				MPN/100mL			03/27/12 19:10	1

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

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	1600		2.0	2.0	MPN/100mL			03/27/12 19:10	1

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Boeing SSFL NPDES

TestAmerica Job ID: 440-6739-1

Client Sample ID: Arroyo Simi-FP
Date Collected: 03/27/12 13:15
Date Received: 03/27/12 18:45

Lab Sample ID: 440-6739-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	16102		AK	TAL IRV
								(Start) 03/27/12 19:10		
								(End) 03/30/12 15:52		
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	16104		AK	TAL IRV
								(Start) 03/27/12 19:10		
								(End) 03/30/12 15:52		

Laboratory References:

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

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

QC Association Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL NPDES

TestAmerica Job ID: 440-6739-1

Biology

Analysis Batch: 16102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-6739-1	Arroyo Simi-FP	Total/NA	Water	SM 9221E	

Analysis Batch: 16104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-6739-1	Arroyo Simi-FP	Total/NA	Water	SM 9221F	

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: MWH Americas Inc
Project/Site: Boeing SSFL NPDES

TestAmerica Job ID: 440-6739-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Irvine	Arizona	State Program	9	AZ0671
TestAmerica Irvine	California	LA Cty Sanitation Districts	9	10256
TestAmerica Irvine	California	NELAC	9	1108CA
TestAmerica Irvine	California	State Program	9	2706
TestAmerica Irvine	Guam	State Program	9	Cert. No. 10.001r
TestAmerica Irvine	Hawaii	State Program	9	N/A
TestAmerica Irvine	Nevada	State Program	9	CA015312007A
TestAmerica Irvine	New Mexico	State Program	6	N/A
TestAmerica Irvine	Northern Mariana Islands	State Program	9	MP0002
TestAmerica Irvine	Oregon	NELAC	10	4005
TestAmerica Irvine	USDA	Federal		P330-09-00080

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

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

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

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

Client:	TestAmerica Irvine 17461 Derian Avenue Suite 100 Irvine , CA 92614	**EMSL Order ID:**	371204891
		Date Received:	3/29/2012
		Date Analyzed:	3/30/2012
Attn.		**Date Reported:**	4/2/2012
Project:	**44002624/Boeing SSFL NPDES**	**Date Amended:**	

Real-Time PCR Analysis for Human *Bacteroides*

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

Lab Sample Number	Client Sample ID	Location	Amount Received	Amount Sampled	CEs /100 mL
4891-1	Arroyo Simi-FP(440-6739-1)		Water 250 ml	Water 250 ml	None Detected

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

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

USEPA License No: 0240-02

Quanyi "Charlie" Li, Ph.D.

Director, PCR and DNA Analysis Lab

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 Arroyo Simi - Frontier Park
Project Manager: Bronwyn Kelly Sampler: Rick BONAGA	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Fecal coliform (SM9221)	E. coli (SM9221)	MST-Bateriodales, Human	Comments
Arroyo Simi-FP	W	125 mL Poly	1	3-27-2012 13:15	Na2S2O3	1	X			
Arroyo Simi-FP	W	125 mL Poly	1	3-27-2012 13:15	Na2S2O3	2		X		
Arroyo Simi-FP	W	125 mL Poly	1	15:20	None	3			X	Deliver to lab ASAP

ANALYSIS REQUIRED

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

Temp °F =

pH =

Time of readings =

Relinquished By	Date/Time:	Received By	Date/Time:
	3-27-2012 15:30		3-27-12 15:30
	3-27-12 18:45		3/27/12 18:45

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

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

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

4.0

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-6739-1

Login Number: 6739

List Source: TestAmerica Irvine

List Number: 1

Creator: Perez, Angel

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