APPENDIX G

Section 5

Outfall 002 – April 13, 2012 MEC^X Data Validation Report



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-8624-1

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: 440-8624-1

Project Manager: B. Kelly Matrix: Water

QC Level: IV No. of Samples: 2

No. of Reanalyses/Dilutions: 0

Laboratory: TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 002	440-8624-1	N/A	Water	4/13/2012 8:35:00 AM	
Outfall 002 Composite	440-8694-1	S204070-01	Water	4/13/2012 5:54:00 PM	1613B, 180.1, 200.7, 314.0, 900. 901.1, 903.1, 904, 905, 906, SM 2540D, ASTM D5174

II. Sample Management

No anomalies were observed regarding sample management. The temperature upon receipt was not noted by Eberline; however, due to the nonvolatile nature of the analytes, no qualifications were required. The 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 upon receipt at TestAmerica-West Sacramento. As the samples were couriered to TestAmerica-Irvine, custody seals were not required. TestAmerica-Irvine did not utilize custody seals to ship the samples via FedEx to Eberline. If necessary, the client ID was added to the sample result summary by the reviewer.

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Data Qualifier Reference Table

Qualifie	r 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
Н	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
С	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.
В	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.
Е	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
Α	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	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.
Р	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.
* , *	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: June 5, 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.
 - o 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.
 - o 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 following were not detected in the method blank: 2,3,7,8-TCDD, 1,2,3,7,8-PeCDD, total PeCDD, 2,3,7,8-TCDF, and total TCDF. The method blank had detects reported above the EDL for all remaining target compounds and totals. Most of the method blank results were reported as EMPCs; however, the reviewer deemed it appropriate to evaluate all method blank results for the purpose of qualifying sample

results. Individual isomer results detected in the sample between the EDL and the reporting limit were qualified as nondetected "U," at the level of contamination. The method blank concentration of OCDD was insufficient to qualify the sample result. The totals for the method blank contaminants were qualified as nondetected, "U," as the same peaks comprised the method blank totals.

- 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 for all internal standards.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. A confirmation analysis was performed for 2,3,7,8-TCDF; however, the original result was not confirmed. The original result was rejected, "R," in favor of the nondetected confirmation result.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any reportable sample 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 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.

Results reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Total TCDF, a single EMPC peak, was qualified as estimated, "J."

B. EPA METHODS 200.7 and 245.1—Metals and Mercury

Reviewed By: P. Meeks Date Reviewed: June 5, 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 and 245.1, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: Analytical holding times, six months for ICP and 28 days for mercury, were met.
- Calibration: Calibration criteria were met. Mercury initial calibration r² values were ≥0.995 and all initial and continuing calibration recoveries were within 90-110% for the ICP and 85-115% for mercury. 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%. 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 laboratoryestablished QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards Performance: Not applicable to this analysis.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC

data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

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

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

C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks

Date Reviewed: June 5, 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 less than 20%; therefore, gross alpha detected in the sample was qualified as estimated, "J." The remaining detector efficiencies were greater than 20%.

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. 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: Total uranium was recovered nominally below the control limit; therefore, total uranium detected in the sample was qualified as estimated, "J." Strontium was recovered below the control limit; therefore, nondetected strontium in the sample was qualified as estimated, "UJ." The remaining 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.

D. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks Date Reviewed: June 5, 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 exceeded for the retained result; therefore, nondetected perchlorate in the sample was qualified as estimated, "UJ."
- Calibration: Calibration criteria were met. The initial calibration r² values were ≥0.995 and all initial and continuing calibration recoveries were within 90-110%. IPC recoveries were within the method-established control limit of 80-120%. The ICCS recovery was within the method-control limits of 75-125%.
- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: The recovery was within the methodestablished QC limits of 85-115%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.

 Matrix Spike/Matrix Spike Duplicate: A matrix spike analysis was performed on the retained result. The recovery was below the control limits of 80-120%, at 78%; therefore, nondetected perchlorate in the sample was qualified as estimated, "UJ."

 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.

In the original analysis of this sample, the perchlorate retention time was more than 30 seconds earlier than the expected retention time. While this was within the maximum ±5% retention time window prescribed by the method, the peak shape indicated the possible presence of an interferent. As the detect was not spiked for confirmation, the validator requested the sample be reanalyzed and a matrix spike performed. The reanalysis, performed outside of holding time, was a nondetect and the matrix spike recovery was nominally below the control limit at 78%. Based on the original retention time and poor peak shape, it was the reviewer's professional opinion that the reanalysis was the more technically sound result. Therefore, the reviewer changed the original reported result to match the result of the reanalysis.

- 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: June 5, 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 120.1 and 180.1, Standard Methods SM 2540D, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: Analytical holding times, 48 hours for turbidity, seven days for TSS, and 28 days for conductivity, were met.
- Calibration: Calibration criteria were met. The turbidity ICV was recovered at 80%' therefore, turbidity detected in the sample was qualified as estimated, "J." The remaining

initial and all continuing calibration recoveries were within 90-110%. The balance calibration logs were considered acceptable.

- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples.
 Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms 440-8624-1

Analysis Method 120.1

Sample Name Outfall 002 Matrix Type: Water Validation Level: IV

Lab Sample Name: 440-8624-1 **Sample Date:** 4/13/2012 8:35:00 AM

Analyte CAS No Result RL MDL Result Lab Validation Value Units Qualifier Qualifier Notes

Specific Conductance STL00244 650 1.0 1.0 umhos/c

Analysis Method 1613B

Sample Name Outfall 002 Composite Matrix Type: Water Validation Level: IV

Lab Sample Name: 440-8694-1 **Sample Date:** 4/13/2012 5:54:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.000050	0.0000000	ug/L	J B	U	В
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000050	0.0000000	ug/L	J Q B	U	В
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000050	0.0000001	ug/L	J Q B	U	В
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000050	0.0000006	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000050	0.0000000	ug/L	J Q B	U	В
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000050	0.0000008	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000050	0.0000000	ug/L	JQB	U	В
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000050	0.0000006	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000050	0.0000000	ug/L	J B	U	В
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000050	0.0000003	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000050	0.0000003	ug/L	JQB	U	В
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.000050	0.0000000	ug/L	JQB	U	В
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000050	0.0000003	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.000010	0.0000007	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.000010	0.0000022	ug/L		U	
2,3,7,8-TCDF	51207-31-9	0.000001	0.000010	0.0000001	ug/L	1 Q	R	D
OCDD	3268-87-9	0.00011	0.00010	0.0000000	ug/L	В		
OCDF	39001-02-0	ND	0.00010	0.0000000	ug/L	J B	U	В
Total HpCDD	37871-00-4	ND	0.000050	0.0000000	ug/L	J B	U	В
Total HpCDF	38998-75-3	ND	0.000050	0.0000001	ug/L	J Q B	U	В
Total HxCDD	34465-46-8	ND	0.000050	0.0000006	ug/L		U	
Total HxCDF	55684-94-1	ND	0.000050	0.0000000	ug/L	J Q B	U	В
Total PeCDD	36088-22-9	ND	0.000050	0.0000003	ug/L		U	
Total PeCDF	30402-15-4	ND	0.000050	0.0000003	ug/L	J Q B	U	В
Total TCDD	41903-57-5	ND	0.000010	0.0000000	ug/L	JQB	U	В
Total TCDF	55722-27-5	0.000003	0.000010	0.0000001	ug/L	J Q	J	DNQ, *III

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Analy	vsis	Method	180.1

Analysis Melno	a 100.1							
Sample Name	Outfall 002 Co	omposite	Matri	х Туре:	Water	7	alidation Le	vel: IV
Lab Sample Name:	440-8694-1	Sam	ple Date:	4/13/201	2 5:54:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Turbidity	STL00189	52	0.20	0.080	NTU		J	R
Analysis Method	d 200.7	Rev 4.	4					
Sample Name	Outfall 002 Co	omposite	Matri	x Type:	Water	7	alidation Le	vel: IV
Lab Sample Name:	440-8694-1	Sam	ple Date:	4/13/201	2 5:54:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Iron	7439-89-6	1.7	0.040	0.015	mg/L			
Iron, Dissolved	7439-89-6	0.045	0.040	0.015	mg/L			
Zinc	7440-66-6	8.3	20	6.0	ug/L	J,DX	J	DNQ
Zinc, Dissolved	7440-66-6	ND	20	6.0	ug/L		U	
Analysis Method	d 245.1							
Sample Name	Outfall 002 Co	omposite	Matri	x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-8694-1	Sam	ple Date:	4/13/201	2 5:54:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/L		U	
Mercury, Dissolved	7439-97-6	ND	0.20	0.10	ug/L		U	
Analysis Method	d 314.0							
Sample Name	Outfall 002 Co	omposite	Matri	x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-8694-1	Sam	ple Date:	4/13/201	2 5:54:00 PM			
Analyte	CAS No							
	CAS NO	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	
Perchlorate	14797-73-0		RL 4.0	MDL 0.95				
Perchlorate Analysis Method	14797-73-0	Value ND		0.95	Units ug/L		Qualifier	Notes H, Q, \$, result from
	14797-73-0	ND ND	4.0 C K-40	0.95	Units ug/L	Qualifier	Qualifier	Notes H, Q, \$, result from 20
Analysis Method	14797-73-0 d Gamn	ND ND na Spec	4.0 C K-40	0.95 <i>CS-13</i> x Type:	Units ug/L	Qualifier	Qualifier UJ	Notes H, Q, \$, result from 20
Analysis Method Sample Name Lab Sample Name:	14797-73-0 d Gamn Outfall 002 Co	ND ND na Spec	4.0 C K-40 Matri	0.95 <i>CS-13</i> x Type:	Units ug/L 7 Water	Qualifier	Qualifier UJ Validation Le	Notes H, Q, \$, result from 20 vel: IV
Sample Name	14797-73-0 d Gamn Outfall 002 Co 440-8694-1	ND na Speciomposite Sam Result	4.0 C K-40 Matri ple Date:	0.95 <i>CS-13</i> x Type: 4/13/201	Units ug/L 7 Water 2 5:54:00 PM Result	Qualifier V Lab	Qualifier UJ Validation Le Validation	Notes H, Q, \$, result from 20 vel: IV

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Analysis Method Gross Alpha and Beta

Analysis meino	ja Gross	<i>S</i> Агрпа	una D	eiu				
Sample Name	Outfall 002 C	omposite	Matri	іх Туре:	Water	7	Validation Le	vel: IV
Lab Sample Name:	440-8694-1	Sam	ple Date:	4/13/201	2 5:54:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	1.34	3	1.26	pCi/L	J	J	C, DNQ
Gross Beta	12587472	4.81	4	1.44	pCi/L			
Analysis Metho	od Radii	ım 226						
Sample Name	Outfall 002 C	omposite	Matri	іх Туре:	Water	7	Validation Le	vel: IV
Lab Sample Name:	440-8694-1	Sam	ple Date:	4/13/201	2 5:54:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.266	1	0.587	pCi/L	U	U	
Analysis Metho	od Radii	ım 228						
Sample Name	Outfall 002 C	omposite	Matri	іх Туре:	Water	7	Validation Le	vel: IV
Lab Sample Name:	440-8694-1	Sam	ple Date:	4/13/201	2 5:54:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.295	1	0.382	pCi/L	U	U	
Analysis Metho	od SM 2.	540D						
Sample Name	Outfall 002 C	omposite	Matri	іх Туре:	Water	7	Validation Le	vel: IV
Lab Sample Name:	440-8694-1	Sam	ple Date:	4/13/201	2 5:54:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	STL00161	53	10	10	mg/L			
Analysis Metho	od Stron	tium 90)					
Sample Name	Outfall 002 C	omposite	Matri	іх Туре:	Water	7	Validation Le	vel: IV
Lab Sample Name:	440-8694-1	Sam	ple Date:	4/13/201	2 5:54:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.131	2	0.835	pCi/L	U	UJ	L

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Analysis Method Tritium

Sample Name	Outfall 002 C	Composite	Matri	іх Туре:	Water	7	Validation Le	evel: IV
Lab Sample Name:	440-8694-1	Sam	ple Date:	4/13/201	2 5:54:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	19.4	500	148	pCi/L	U	U	
Analysis Metho	od Uran	ium, Ca	ombine	d				
Sample Name	Outfall 002 C	Composite	Matri	іх Туре:	Water	7	Validation Le	evel: IV
Lab Sample Name:	440-8694-1	Sam	ple Date:	4/13/201	2 5:54:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total	NA	0.172	1	0.018	pCi/L	J	J	L,DNO

Thursday, June 21, 2012 Page 4 of 4

APPENDIX G

Section 6

Outfall 002 – April 13, 2012 Test America Analytical Laboratory Report



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: 440-8624-1

Client Project/Site: Routine Outfall 002 Grab

For:

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

Attn: Bronwyn Kelly

Delby Wilson

Authorized for release by: 5/20/2012 3:44:43 PM

Debby Wilson Project Manager I

debby.wilson@testamericainc.com

.....LINKS

Review your project results through

Total Access

Have a Question?



Visit us at: www.testamericainc.com

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

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

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

Project/Site: Routine Outfall 002 Grab

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1.

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

5/20/2012 3:44:43 PM

Client: MWH Americas Inc Project/Site: Routine Outfall 002 Grab TestAmerica Job ID: 440-8624-1

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1:

Sample Summary

Matrix

Water

Water

Water

Water

Client: MWH Americas Inc

Lab Sample ID

440-8624-1

440-8624-2

440-8694-1

440-8694-2

Project/Site: Routine Outfall 002 Grab

Client Sample ID

Outfall 002 Composite

Outfall 002

Trip Blanks

Trip Blank

TestAmerica Job ID: 440-8624-1

Collected	Received
04/13/12 08:35	04/13/12 19:00
04/13/12 08:35	04/13/12 19:00

04/13/12 17:54

04/13/12 17:54

04/13/12 19:00 04/14/12 16:15

04/14/12 16:15

Case Narrative

Client: MWH Americas Inc

Project/Site: Routine Outfall 002 Grab

Job ID: 440-8624-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-8624-1

Comments

No additional comments.

Receipt

The samples were received on 4/13/2012 7:00 PM and 4/14/2012 4:15 PM; the samples arrived in good conditions, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.1 C and 3.4 C.

GC/MS VOA

Method(s) 624, 8260B: The continuing calibration verification (CCV) for Acetone associated with batch 20367 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. (CCVIS 440-20367/2)

Method(s) 624, 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for batch 20367 exceeded control limits for the following analytes: Acetone. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. (LCS 440-20367/6)

No other analytical or quality issues were noted.

GC/MS Semi VOA

Method(s) 625: Surrogate recovery for the following sample(s) was outside control limits: Grab (440-8891-1), Outfall 002 Composite (440-8694-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 625: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 21041 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 625: The following sample(s) was diluted due to the abundance of non-target analytes: Grab (440-8891-1). Elevated reporting limits (RLs) are provided.

Method(s) 625: The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 8891 was outside control limits for 4-Chloroaniline and 4-Nitroaniline. Non-homogeneity of the sample matrix is suspected.

No other analytical or quality issues were noted.

HPLC

Method(s) 314.0, 314.0 LL: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for perchlorate batch 20654 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 19875. 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

No analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

WATER, 1613B, Dioxins/Furans with Totals

TestAmerica Job ID: 440-8624-1

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4.0

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12

R

Case Narrative

Client: MWH Americas Inc

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Job ID: 440-8624-1 (Continued)

Laboratory: TestAmerica Irvine (Continued)

Sample: 1

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

This sample was analyzed for confirmation of 2,3,7,8-TCDF on the DB225 column (5D2). The continuing calibration verification (CCV) ST0424B from 5D2 analyzed on April 24, 2012 at 23:19 is out of control for the Cleanup Recovery Standard (CRS) 37Cl-2,3,7,8-TCDD with a high bias. All samples meet control limits for the CRS in both the DB225 confirmation analysis and the initial DB5 analysis. The CRS is in control in the CCV from the initial DB5 analysis. The CRS is not used in the calculation of 2,3,7,8-TCDF. The high bias of the CRS in the confirmation run is isolated to that compound only. The CRS is not reported from this run. For these reasons there is no impact on the data.

Organic Prep

No analytical or quality issues were noted.

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13

Project/Site: Routine Outfall 002 Grab

Client Sample ID: Outfall 002

Date Collected: 04/13/12 08:35 Date Received: 04/13/12 19:00 Lab Sample ID: 440-8624-1

TestAmerica Job ID: 440-8624-1

Matrix: Water

Matrix: Water

Matrix: Water

Method: 624 - Volatile Organic	Compounds (G	C/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/18/12 01:35	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/18/12 01:35	1
Trichloroethene	ND		0.50	0.26	ug/L			04/18/12 01:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		80 - 120					04/18/12 01:35	1
4-Bromofluorobenzene (Surr)	89		80 - 120					04/18/12 16:43	1
Dibromofluoromethane (Surr)	108		80 - 120					04/18/12 01:35	1
Dibromofluoromethane (Surr)	99		80 - 120					04/18/12 16:43	1
Toluene-d8 (Surr)	105		80 - 120					04/18/12 01:35	1
Toluene-d8 (Surr)	100		80 - 120					04/18/12 16:43	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.7	1.3	mg/L		04/26/12 07:22	04/26/12 07:38	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	650		1.0	1.0	umhos/cm			04/16/12 10:13	1
Settleable Solids	ND		0.10	0.10	mL/L/Hr			04/14/12 13:00	1

Client Sample ID: Trip Blanks Lab Sample ID: 440-8624-2

Date Collected: 04/13/12 08:35

Date Received: 04/13/12 19:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/17/12 05:40	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/17/12 05:40	1
Trichloroethene	ND		0.50	0.26	ug/L			04/17/12 05:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120			_		04/17/12 05:40	1
Dibromofluoromethane (Surr)	98		80 - 120					04/17/12 05:40	1
Toluene-d8 (Surr)	104		80 - 120					04/17/12 05:40	1

Client Sample ID: Outfall 002 Composite Lab Sample ID: 440-8694-1

Date Collected: 04/13/12 17:54 Date Received: 04/14/12 16:15

Method: 625 - Semivolatile Or	rganic Compound	s (GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		4.72	1.60	ug/L		04/20/12 14:44	04/23/12 01:23	1
2,4-Dinitrotoluene	ND		4.72	0.189	ug/L		04/20/12 14:44	04/23/12 01:23	1
2,4,6-Trichlorophenol	ND		0.943	0.0943	ug/L		04/20/12 14:44	04/23/12 01:23	1
Pentachlorophenol	ND		1.89	0.377	ug/L		04/20/12 14:44	04/23/12 01:23	1
N-Nitrosodimethylamine	ND		1.89	0.0943	ug/L		04/20/12 14:44	04/23/12 01:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	97		50 - 120				04/20/12 14:44	04/23/12 01:23	1
2-Fluorophenol	84		30 - 120				04/20/12 14:44	04/23/12 01:23	1
2,4,6-Tribromophenol	110		40 - 120				04/20/12 14:44	04/23/12 01:23	1
Nitrobenzene-d5	102		45 - 120				04/20/12 14:44	04/23/12 01:23	1
Terphenyl-d14	134	AY	50 ₋ 125				04/20/12 14:44	04/23/12 01:23	1

2

Client: MWH Americas Inc

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Client Sample ID: Outfall 002 Composite

Date Collected: 04/13/12 17:54 Date Received: 04/14/12 16:15 Lab Sample ID: 440-8694-1

Matrix: Water

Surrogate	%Recovery Q		imits	Prepared	Analyzed	Dil Fac
Phenol-d6	93	3	<u>15 - 120</u>	04/20/12 14:44	04/23/12 01:23	1

Analyte	Result Qualifier	RL	MDL Unit	ט	Prepared	Analyzed	DII Fac
alpha-BHC	ND	0.0048	0.0024 ug/L		04/15/12 14:34	04/16/12 16:31	1
Surrogate	%Recovery Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xvlene	62	35 - 115	04/15/12 14:34	04/16/12 16:31	1

Method: 300.0 - Anions, Ion Chromatography

monious occio 7 miono, ion omatog	. wp								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23		5.0	4.0	mg/L			04/14/12 19:08	10
Nitrate as N	0.20		0.11	0.080	mg/L			04/14/12 18:05	1
Nitrate Nitrite as N	0.20	J,DX	0.26	0.19	mg/L			04/14/12 18:05	1
Sulfate	160		5.0	4.0	mg/L			04/14/12 19:08	10
Nitrite as N	ND		0.15	0.11	mg/L			04/14/12 18:05	1

Method: 314.0 - Perchlorate (IC)

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	20	4.0	0.95 ug/L			04/19/12 21:43	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	0.00000077	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
Total TCDD	0.0000039	JQB	0.000010	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
1,2,3,7,8-PeCDD	ND		0.000050	0.00000037	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
Total PeCDD	ND		0.000050	0.00000037	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
1,2,3,4,7,8-HxCDD	ND		0.000050	0.00000068	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000089	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000067	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
Total HxCDD	ND		0.000050	0.00000067	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
1,2,3,4,6,7,8-HpCDD	0.000012	JB	0.000050	0.000000030	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
Total HpCDD	0.000025	JB	0.000050	0.00000030	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
OCDD	0.00011	В	0.00010	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
2,3,7,8-TCDF	0.0000018	JQ	0.000010	0.00000014	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
2,3,7,8-TCDF	ND		0.000010	0.0000022	ug/L		04/23/12 09:00	04/25/12 04:53	0.98
Total TCDF	0.0000036	JQ	0.000010	0.00000014	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
1,2,3,7,8-PeCDF	0.0000034	JQB	0.000050	0.00000034	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
2,3,4,7,8-PeCDF	ND		0.000050	0.00000035	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
Total PeCDF	0.0000034	JQB	0.000050	0.00000034	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
1,2,3,4,7,8-HxCDF	0.0000053	JQB	0.000050	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
1,2,3,6,7,8-HxCDF	0.0000014	JQB	0.000050	0.000000030	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
2,3,4,6,7,8-HxCDF	0.0000016	JQB	0.000050	0.000000030	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
1,2,3,7,8,9-HxCDF	0.0000016	JB	0.000050	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
Total HxCDF	0.000017	JQB	0.000050	0.00000030	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
1,2,3,4,6,7,8-HpCDF	0.0000071	JQB	0.000050	0.00000010	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
1,2,3,4,7,8,9-HpCDF	0.000030	JQB	0.000050	0.00000014	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
Total HpCDF	0.000019	JQB	0.000050	0.00000013	ug/L		04/23/12 09:00	04/24/12 22:15	0.98
OCDF	0.000018	JB	0.00010	0.000000070	ug/L		04/23/12 09:00	04/24/12 22:15	0.98

TestAmerica Job ID: 440-8624-1

Client Sample ID: Outfall 002 Composite

Method: 245.1 - Mercury (CVAA) - Dissolved

Analyte

Mercury

Date Collected: 04/13/12 17:54 Date Received: 04/14/12 16:15 Lab Sample ID: 440-8694-1

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	84		35 - 197				04/23/12 09:00	04/24/12 22:15	0.98
37CI4-2,3,7,8-TCDD	113		35 - 197				04/23/12 09:00	04/25/12 04:53	0.98
Internal Standard	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	50		25 - 164				04/23/12 09:00	04/24/12 22:15	0.98
13C-1,2,3,7,8-PeCDD	53		25 - 181				04/23/12 09:00	04/24/12 22:15	0.98
13C-1,2,3,4,7,8-HxCDD	56		32 - 141				04/23/12 09:00	04/24/12 22:15	0.98
13C-1,2,3,6,7,8-HxCDD	55		28 - 130				04/23/12 09:00	04/24/12 22:15	0.98
13C-1,2,3,4,6,7,8-HpCDD	72		23 - 140				04/23/12 09:00	04/24/12 22:15	0.98
13C-OCDD	58		17 - 157				04/23/12 09:00	04/24/12 22:15	0.98
13C-2,3,7,8-TCDF	43		24 - 169				04/23/12 09:00	04/24/12 22:15	0.98
13C-2,3,7,8-TCDF	62		24 - 169				04/23/12 09:00	04/25/12 04:53	0.98
13C-1,2,3,7,8-PeCDF	43		24 - 185				04/23/12 09:00	04/24/12 22:15	0.98
13C-2,3,4,7,8-PeCDF	45		21 - 178				04/23/12 09:00	04/24/12 22:15	0.98
13C-1,2,3,6,7,8-HxCDF	54		26 - 123				04/23/12 09:00	04/24/12 22:15	0.98
13C-2,3,4,6,7,8-HxCDF	48		28 - 136				04/23/12 09:00	04/24/12 22:15	0.98
13C-1,2,3,7,8,9-HxCDF	51		29 - 147				04/23/12 09:00	04/24/12 22:15	0.98
13C-1,2,3,4,6,7,8-HpCDF	54		28 - 143				04/23/12 09:00	04/24/12 22:15	0.98
13C-1,2,3,4,7,8,9-HpCDF	60		26 - 138				04/23/12 09:00	04/24/12 22:15	0.98
13C-1,2,3,4,7,8-HxCDF	48		26 - 152				04/23/12 09:00	04/24/12 22:15	0.98
<u> </u>		Qualifier	RL	MDL		D	Prepared	Analyzed	
	1.7	Qualifier	0.040	0.015			04/24/12 09:36	04/24/12 21:17	
Iron	1.7	J,DX		0.015					
Iron Zinc	1.7 8.3	J,DX	0.040	0.015	mg/L	<u>-</u>	04/24/12 09:36	04/24/12 21:17	1
Iron Zinc Method: 200.7 Rev 4.4 - Metals (I	1.7 8.3 ICP) - Dissolve	J,DX	0.040	0.015 6.0	mg/L	<u></u>	04/24/12 09:36	04/24/12 21:17	1
Iron Zinc Method: 200.7 Rev 4.4 - Metals (I Analyte	1.7 8.3 ICP) - Dissolve	J,DX	0.040	0.015 6.0	mg/L ug/L		04/24/12 09:36 04/24/12 09:36	04/24/12 21:17 04/24/12 21:17	1 1 Dil Fac
Iron Zinc Method: 200.7 Rev 4.4 - Metals (I Analyte Iron	1.7 8.3 ICP) - Dissolved Result	J,DX	0.040 20 RL	0.015 6.0 MDL 0.015	mg/L ug/L		04/24/12 09:36 04/24/12 09:36 Prepared	04/24/12 21:17 04/24/12 21:17 Analyzed	1 1 Dil Fac
Iron Zinc Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc	1.7 8.3 ICP) - Dissolve Result 0.045 ND	J,DX d Qualifier	0.040 20 RL 0.040	0.015 6.0 MDL 0.015	mg/L ug/L Unit mg/L		04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06	1 1 Dil Fac
Iron Zinc Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc Method: 200.8 - Metals (ICP/MS)	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove	J,DX d Qualifier	0.040 20 RL 0.040	0.015 6.0 MDL 0.015 6.0	mg/L ug/L Unit mg/L		04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06	1 1 Dil Fac
Iron Zinc Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove	J,DX d Qualifier	0.040 20 RL 0.040 20	0.015 6.0 MDL 0.015 6.0	mg/L ug/L Unit mg/L ug/L	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06	Dil Fac
Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove Result	J,DX d Qualifier	0.040 20 RL 0.040 20	0.015 6.0 MDL 0.015 6.0 MDL 0.10	mg/L ug/L Unit mg/L ug/L Unit	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06 Analyzed	Dil Fac
Iron Zinc Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove Result ND 2.3	J,DX d Qualifier	0.040 20 RL 0.040 20 RL 1.0	0.015 6.0 MDL 0.015 6.0 MDL 0.10	mg/L ug/L Unit mg/L ug/L Unit ug/L ug/L	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11 Prepared 04/23/12 17:06	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06 Analyzed 04/28/12 19:10	Dil Face Dil Face 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Iron Zinc Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove Result ND 2.3 0.87	J,DX d Qualifier rable Qualifier	0.040 20 RL 0.040 20 RL 1.0 2.0	0.015 6.0 MDL 0.015 6.0 MDL 0.10 0.50 0.20	mg/L ug/L Unit mg/L ug/L Unit ug/L ug/L	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11 Prepared 04/23/12 17:06 04/23/12 17:06	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06 Analyzed 04/28/12 19:10 04/28/12 19:10	Dil Face Dil Face 1 1 1 1 1 1 1 1 1 1 1
Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove Result ND 2.3 0.87 0.51	J,DX d Qualifier rable Qualifier	0.040 20 RL 0.040 20 RL 1.0 2.0 1.0	0.015 6.0 MDL 0.015 6.0 MDL 0.10 0.50 0.20	mg/L ug/L Unit mg/L ug/L Unit ug/L ug/L ug/L ug/L	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11 Prepared 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06 Analyzed 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10	Dil Face Dil Face 1 1 1 1 1 1 1 1 1 1 1
Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium Method: 200.8 - Metals (ICP/MS)	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove Result ND 2.3 0.87 0.51	J,DX d Qualifier rable Qualifier	0.040 20 RL 0.040 20 RL 1.0 2.0 1.0	0.015 6.0 MDL 0.015 6.0 MDL 0.10 0.50 0.20	mg/L ug/L Unit mg/L ug/L Unit ug/L ug/L ug/L ug/L	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11 Prepared 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06 Analyzed 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10	Dil Fac 1 Dil Fac 1 1 1 1 1 1 1 1
Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium Method: 200.8 - Metals (ICP/MS) Analyte	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove Result ND 2.3 0.87 0.51	J,DX d Qualifier rable Qualifier J,DX J,DX	0.040 20 RL 0.040 20 RL 1.0 2.0 1.0	0.015 6.0 MDL 0.015 6.0 MDL 0.10 0.50 0.20	mg/L ug/L Unit mg/L ug/L Unit ug/L ug/L ug/L ug/L Ug/L Ug/L	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11 Prepared 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06 Analyzed 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10	Dil Fac
Method: 200.7 Rev 4.4 - Metals (IAnalyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Cadmium	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove Result ND 2.3 0.87 0.51 - Dissolved Result ND	J,DX d Qualifier rable Qualifier J,DX J,DX	0.040 20 RL 0.040 20 RL 1.0 2.0 1.0 2.0 RL	0.015 6.0 MDL 0.015 6.0 MDL 0.50 0.20 0.50	mg/L ug/L Unit mg/L ug/L Unit ug/L ug/L Ug/L Ug/L Ug/L Ug/L	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11 Prepared 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06 Analyzed 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10	Dil Fac Dil Fac Dil Fac 1 Dil Fac 1 Dil Fac
Method: 200.7 Rev 4.4 - Metals (IAnalyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove Result ND 2.3 0.87 0.51 - Dissolved Result ND	J,DX d Qualifier rable Qualifier J,DX J,DX Qualifier	0.040 20 RL 0.040 20 RL 1.0 2.0 1.0 2.0 RL 1.0	0.015 6.0 MDL 0.015 6.0 MDL 0.10 0.50 0.20 0.50 MDL 0.10	mg/L ug/L Unit mg/L ug/L Ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L u	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11 Prepared 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06 Analyzed 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 Analyzed 05/01/12 23:03	Dil Face
Iron Zinc Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove Result ND 2.3 0.87 0.51 - Dissolved Result ND 1.8	J,DX d Qualifier rable Qualifier J,DX J,DX Qualifier	0.040 20 RL 0.040 20 RL 1.0 2.0 1.0 2.0 1.0 2.0 2.0	0.015 6.0 MDL 0.015 6.0 MDL 0.10 0.50 0.20 0.50 MDL 0.10 0.50 0.20	mg/L ug/L Unit mg/L ug/L Ug/L Ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11 Prepared 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06 Prepared 04/23/12 10:08 04/23/12 10:08	04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06 Analyzed 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 Analyzed 05/01/12 23:03 05/01/12 23:03	Dil Face 1 1 1 Dil Face 1 1 1 1 Dil Face 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Analyte Iron Zinc Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium Method: 245.1 - Mercury (CVAA)	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove Result ND 2.3 0.87 0.51 - Dissolved Result ND 1.8 ND ND	J,DX d Qualifier rable Qualifier J,DX J,DX Qualifier	0.040 20 RL 0.040 20 RL 1.0 2.0 1.0 2.0 RL 1.0 2.0 1.0 2.0 1.0	0.015 6.0 MDL 0.015 6.0 MDL 0.10 0.50 0.20 0.50 MDL 0.10 0.50 0.20	mg/L ug/L Unit mg/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L u	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11 Prepared 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06 04/23/12 10:08 Prepared 04/23/12 10:08 04/23/12 10:08 04/23/12 10:08	04/24/12 21:17 04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06 Analyzed 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 05/01/12 23:03 05/01/12 23:03	Dil Fac Dil Fac 1 Dil Fac 1 1 Dil Fac 1 1 1 Dil Fac 1 1
Iron Zinc Method: 200.7 Rev 4.4 - Metals (I Analyte Iron Zinc Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium Method: 200.8 - Metals (ICP/MS) Analyte Cadmium Copper Lead Selenium Copper Lead Selenium Copper	1.7 8.3 ICP) - Dissolved Result 0.045 ND - Total Recove Result ND 2.3 0.87 0.51 - Dissolved Result ND 1.8 ND ND	J,DX d Qualifier rable Qualifier J,DX J,DX Qualifier	0.040 20 RL 0.040 20 RL 1.0 2.0 1.0 2.0 RL 1.0 2.0 1.0 2.0 1.0	0.015 6.0 MDL 0.015 6.0 MDL 0.10 0.50 0.20 0.50 MDL 0.10 0.50	mg/L ug/L Unit mg/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L u	<u>D</u>	04/24/12 09:36 04/24/12 09:36 Prepared 04/23/12 10:11 04/23/12 10:11 Prepared 04/23/12 17:06 04/23/12 17:06 04/23/12 17:06 04/23/12 10:08 Prepared 04/23/12 10:08 04/23/12 10:08 04/23/12 10:08	04/24/12 21:17 04/24/12 21:17 04/24/12 21:17 Analyzed 04/24/12 13:06 04/24/12 13:06 Analyzed 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 04/28/12 19:10 05/01/12 23:03 05/01/12 23:03	Dil Fac Dil Fac Dil Fac

Dil Fac

Analyzed

04/18/12 13:23

Prepared

04/17/12 08:33

RL

0.20

MDL Unit

0.10 ug/L

Result Qualifier

ND

TestAmerica Job ID: 440-8624-1

Client Sample ID: Outfall 002 Composite

Date Collected: 04/13/12 17:54

Lab Sample ID: 440-8694-1 Matrix: Water

Date Received: 04/14/12 16:15

Gross Beta

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	52		0.20	0.080	NTU			04/14/12 17:41	2
Total Dissolved Solids	360		10	10	mg/L			04/16/12 10:21	1
Total Suspended Solids	53		10	10	mg/L			04/20/12 19:12	1
Cyanide, Total	ND		5.0	3.0	ug/L		04/26/12 18:24	04/26/12 21:26	1
Ammonia (as N)	0.280	J,DX	0.400	0.157	mg/L		04/26/12 19:26	04/26/12 21:20	1
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			04/14/12 21:16	1
Biochemical Oxygen Demand	1.7	J,DX	2.0	0.50	mg/L			04/15/12 12:00	1

Method: Gamma Spec K-40 CS-13	7 - General S	ub Contrac	t Method						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	0.152	U	20		pCi/L		04/26/12 00:00	04/26/12 00:00	1
Potassium-40	-4.54	U	25		pCi/L		04/26/12 00:00	04/26/12 00:00	1

Method: Gross Alpha and Beta -	Gross Alpha/B	eta							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	1.34	J	3		pCi/L		04/26/12 00:00	05/01/12 08:47	1
Gross Beta	4.81		4		pCi/L		04/26/12 00:00	05/01/12 08:47	1

Method: Radium 226 - General Sul	b Contract Me	etnod							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	0.266	U	1		pCi/L		05/04/12 00:00	05/04/12 13:45	1

Method: Radium 228 - RAD-226-22	8 combined								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	0.295	U	1		pCi/L		04/30/12 00:00	04/30/12 14:11	1

Method: Strontium 90 - General S	ub Contract Method					
Analyte	Result Qualifier	RL	MDL Unit	D Prepared	Analyzed	Dil Fac
Strontium-90	-0.131 U	2	pCi/L	04/26/12 00:0	04/26/12 12:35	1

Method: Tritium - General Sub Conti	act Method	l							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	19.4	U	500		pCi/L		04/19/12 00:00	04/19/12 20:21	1

Method: Uranium, Combined - Gen	eral Sub Cor	ntract Metho	od						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0.172	J	1		pCi/L		04/27/12 00:00	04/27/12 08:58	1

Client Sample ID: Trip Blank

Date Collected: 04/13/12 17:54

Lab Sample ID: 440-8694-2

Matrix: Water

Date Collected: 04/13/12 17:54

Date Received: 04/14/12 16:15

-0.018 U

Method: Gamma Spec K-40 CS-	137 - General S	ub Contract N	lethod						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	0.52	U	20		pCi/L		04/26/12 00:00	04/26/12 00:00	1
Potassium-40	1.16	U	25		pCi/L		04/26/12 00:00	04/26/12 00:00	1
Method: Gross Alpha and Beta	- Gross Alpha/B	Beta							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	0.007	U	3		pCi/L		04/26/12 00:00	04/30/12 08:23	1

pCi/L

04/26/12 00:00

04/30/12 08:23

Client Sample Results

Client: MWH Americas Inc

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Client Sample ID: Trip Blank Lab Sample ID: 440-8694-2 Date Collected: 04/13/12 17:54

Matrix: Water

Date Received: 04/14/12 16:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	-0.108	U	1		pCi/L		05/04/12 00:00	05/04/12 13:45	1
Method: Radium 228 - RA	D-226-228 combined								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	-0.123	U	1		pCi/L		04/30/12 00:00	04/30/12 14:11	1
Method: Strontium 90 - Ge	eneral Sub Contract N	lethod							
Method: Strontium 90 - Ge Analyte		Method Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
		Qualifier	RL	MDL	Unit pCi/L	<u>D</u>	Prepared 04/26/12 00:00	Analyzed 04/26/12 12:35	Dil Fac
Analyte	-0.012	Qualifier U	2	MDL		<u>D</u>	<u>.</u>		Dil Fac
Analyte Strontium-90	Result -0.012	Qualifier U	2			D_	<u>.</u>		Dil Fac

Project/Site: Routine Outfall 002 Grab

Client Sample ID: Outfall 002

Date Received: 04/13/12 19:00

Lab Sample ID: 440-8624-1 Date Collected: 04/13/12 08:35

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	20297	04/18/12 01:35	YK	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	20367	04/18/12 16:43	AL	TAL IRV
Total/NA	Analysis	SM 2540F		1	1000 mL	1000 mL	19792	04/14/12 13:00	EC	TAL IRV
Total/NA	Analysis	120.1		1			19954	04/16/12 10:13	XL	TAL IRV
Total/NA	Prep	1664A			1055 mL	1000 mL	22035	04/26/12 07:22	DA	TAL IRV
Total/NA	Analysis	1664A		1			22042	04/26/12 07:38	DA	TAL IRV

Client Sample ID: Trip Blanks Lab Sample ID: 440-8624-2

Date Collected: 04/13/12 08:35 Matrix: Water

Date Received: 04/13/12 19:00

Batch Dil Initial Final Batch Prepared Batch Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab 04/17/12 05:40 Total/NA Analysis 624 1 10 mL 10 mL 20084 YK TAL IRV

Client Sample ID: Outfall 002 Composite Lab Sample ID: 440-8694-1

Date Collected: 04/13/12 17:54 Matrix: Water

Date Received: 04/14/12 16:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Init Amo		Fin Amo		Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1060			mL	21041	04/20/12 14:44	LA	TAL IRV
Total/NA	Analysis	625		1	1000		_		21217	04/23/12 01:23	Al	TAL IRV
Total/NA	Prep	608			1050	mL	2	mL	19875	04/15/12 14:34	AB	TAL IRV
Total/NA	Analysis	608 Pesticides		1					19946	04/16/12 16:31	DD	TAL IRV
Total/NA	Analysis	300.0		1	1	mL	1.0	mL	19784	04/14/12 18:05	KS	TAL IRV
Total/NA	Analysis	300.0		10	1	mL	1.0	mL	19785	04/14/12 19:08	KS	TAL IRV
Total/NA	Analysis	314.0		1	5	mL	1.0	mL	20654	04/19/12 21:43	MN	TAL IRV
Total	Prep	3542			1022.62	mL	20	uL	2114077_P	04/23/12 09:00	TL	TAL WS
Total	Analysis	1613B		0.98					2114077	04/24/12 22:15	SO	TAL WS
Total	Analysis	1613B		0.98					2114077	04/25/12 04:53	so	TAL WS0
Total/NA	Prep	245.1			20	mL	20	mL	20031	04/16/12 15:03	SN	TAL IRV
Total/NA	Analysis	245.1		1					20257	04/17/12 12:54	MP	TAL IRV
Dissolved	Prep	245.1			20	mL	20	mL	20049	04/17/12 08:33	SN	TAL IRV
Dissolved	Analysis	245.1		1					20502	04/18/12 13:23	MP	TAL IRV
Dissolved	Prep	200.2			50	mL	50	mL	21302	04/23/12 10:11	EN	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1					21614	04/24/12 13:06	VS	TAL IRV
Total Recoverable	Prep	200.2			50	mL	50	mL	21521	04/24/12 09:36	EN	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1					21778	04/24/12 21:17	DP	TAL IRV
Total Recoverable	Prep	200.2			50	mL	50	mL	21402	04/23/12 17:06	SC	TAL IRV
Total Recoverable	Analysis	200.8		1					22628	04/28/12 19:10	RC	TAL IRV
Dissolved	Prep	200.2			50	mL	50	mL	21301	04/23/12 10:08	EN	TAL IRV
Dissolved	Analysis	200.8		1					23203	05/01/12 23:03	RC	TAL IRV
Total/NA	Analysis	180.1		2					19825	04/14/12 17:41	EC	TAL IRV
Total/NA	Analysis	SM 5540C		1	100	ml	100	ml	19842	04/14/12 21:16	NEA	TAL IRV

TestAmerica Job ID: 440-8624-1

Project/Site: Routine Outfall 002 Grab

Client: MWH Americas Inc

Date Received: 04/14/12 16:15

Client Sample ID: Outfall 002 Composite

Date Collected: 04/13/12 17:54

Lab Sample ID: 440-8694-1

Matrix: Water

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA Analysis SM5210B 1 19862 04/15/12 12:00 RS TAL IRV TAL IRV Total/NA Analysis SM 2540C 1 100 mL 100 mL 19957 04/16/12 10:21 XL Total/NA SM 2540D 100 mL 21096 04/20/12 19:12 DK TAL IRV Analysis 100 mL Total/NA Prep SM 4500 NH3 B 50 mL 50 mL 22259 04/26/12 19:26 PQI TAL IRV Total/NA Analysis SM 4500 NH3 C 22271 04/26/12 21:20 RW TAL IRV Total/NA Prep Distill/CN 50 mL 50 mL 22248 04/26/12 18:24 PQI TAL IRV Total/NA SM 4500 CN E 22273 04/26/12 21:26 PΩI TAL IRV Analysis Total/NA Analysis 8612 04/26/12 00:00 LS Eber-Rich Gamma Spec K-40 CS-137 8612 P Eber-Rich Total/NA Prep General Prep 04/26/12 00:00 Total/NA 8612 05/01/12 08:47 DVP Eber-Rich Analysis Gross Alpha and Beta Total/NA Prep General Prep 8612 P 05/04/12 00:00 Eber-Rich Total/NA Analysis Radium 226 8612 05/04/12 13:45 TM Eber-Rich Total/NA Prep General Prep 8612 P 04/30/12 00:00 Eber-Rich Total/NA Analysis Radium 228 8612 04/30/12 14:11 ASM Eber-Rich Total/NA Strontium 90 8612 04/26/12 12:35 TSC Eber-Rich Analysis Total/NA Prep General Prep 8612 P 04/19/12 00:00 Eber-Rich Total/NA Analysis Tritium 8612 04/19/12 20:21 WL Eber-Rich Total/NA Prep General Prep 8612_P 04/27/12 00:00 Eber-Rich Total/NA Analysis Uranium, Combined 8612 04/27/12 08:58 LS Eber-Rich

Client Sample ID: Trip Blank

Date Collected: 04/13/12 17:54

Date Received: 04/14/12 16:15

Lab Sample ID: 440-8694-2

Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Gamma Spec K-40 CS-137		1			8612	04/26/12 00:00	LS	Eber-Rich
Total/NA	Prep	General Prep		1			8612_P	04/26/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1			8612	04/30/12 08:23	DVP	Eber-Rich
Total/NA	Prep	General Prep		1			8612_P	05/04/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 226		1			8612	05/04/12 13:45	TM	Eber-Rich
Total/NA	Prep	General Prep		1			8612_P	04/30/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 228		1			8612	04/30/12 14:11	ASM	Eber-Rich
Total/NA	Analysis	Strontium 90		1			8612	04/26/12 12:35	TSC	Eber-Rich
Total/NA	Prep	General Prep		1			8612_P	04/27/12 00:00		Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8612	04/27/12 09:03	LS	Eber-Rich

Laboratory References:

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

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

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

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

TestAmerica Irvine 5/20/2012

Project/Site: Routine Outfall 002 Grab

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

Lab Sample ID: MB 440-20084/4

Matrix: Water

Analysis Batch: 20084

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB

Analyte	Result Qualif	fier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND	0.50	0.42	ug/L			04/16/12 21:06	1
1,2-Dichloroethane	ND	0.50	0.28	ug/L			04/16/12 21:06	1
Trichloroethene	ND	0.50	0.26	ug/L			04/16/12 21:06	1

	MD	MD				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		80 - 120		04/16/12 21:06	1
Dibromofluoromethane (Surr)	90		80 - 120		04/16/12 21:06	1
Toluene-d8 (Surr)	104		80 - 120		04/16/12 21:06	1

Client Sample ID: Lab Control Sample

Matrix: Water

1,1-Dichloroethene

1,2-Dichloroethane

Trichloroethene

Analyte

Analysis Batch: 20084

Lab Sample ID: LCS 440-20084/5 Prep Type: Total/NA

> Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits 25.0 23.8 ug/L 95 70 - 125 25.0 25.5 ug/L 102 60 - 140 25.0 27.1 ug/L 108 70 - 125

LCS LCS

Surrogate	%Recovery Qua	alifier Limits
4-Bromofluorobenzene (Surr)	96	80 - 120
Dibromofluoromethane (Surr)	98	80 - 120
Toluene-d8 (Surr)	102	80 - 120

Lab Sample ID: 440-8626-A-3 MS

Matrix: Water

Analysis Batch: 20084

Client Sample ID: Matrix Spike

Prep Type: Total/NA

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	16		25.0	41.5		ug/L		104	60 - 130	
1,2-Dichloroethane	0.61		25.0	28.9		ug/L		113	60 - 140	
Trichloroethene	29		25.0	56.2		ug/L		111	65 - 125	

MS MS

Surrogate	%Recovery Qualifier	r Limits
4-Bromofluorobenzene (Surr)	94	80 - 120
Dibromofluoromethane (Surr)	98	80 - 120
Toluene-d8 (Surr)	105	80 - 120

Lab Sample ID: 440-8626-A-3 MSD

Matrix: Water

Analysis Batch: 20084

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

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1-Dichloroethene	16		25.0	39.5		ug/L		96	60 - 130	4.94	20
1,2-Dichloroethane	0.61		25.0	26.7		ug/L		104	60 - 140	7.91	20
Trichloroethene	29		25.0	53.3		ug/L		99	65 - 125	5.30	20

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120

Project/Site: Routine Outfall 002 Grab

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

Lab Sample ID: 440-8626-A-3 MSD

Matrix: Water

Analysis Batch: 20084

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

MSD MSD %Recovery Qualifier Surrogate

Dibromofluoromethane (Surr) 98 80 - 120 Toluene-d8 (Surr) 103 80 - 120

Lab Sample ID: MB 440-20297/4 Client Sample ID: Method Blank

Limits

Matrix: Water

Analysis Batch: 20297

Prep Type: Total/NA

MB MB Qualifier MDL Unit Analyte Result RL D Prepared Analyzed Dil Fac ND 0.50 04/17/12 18:28 1,1-Dichloroethene 0.42 ug/L 1,2-Dichloroethane ND 0.50 0.28 ug/L 04/17/12 18:28 Trichloroethene ND 0.26 ug/L 04/17/12 18:28 0.50

MB MB %Recovery Qualifier Limits Dil Fac Surrogate Prepared Analyzed 109 80 - 120 04/17/12 18:28 4-Bromofluorobenzene (Surr) 101 80 - 120 04/17/12 18:28 Dibromofluoromethane (Surr) Toluene-d8 (Surr) 104 80 - 120 04/17/12 18:28

Lab Sample ID: LCS 440-20297/5

Matrix: Water

Analysis Batch: 20297

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

Spike LCS LCS %Rec. Added Result Qualifier Unit D %Rec Limits 1,1-Dichloroethene 25.0 24.1 96 70 - 125 ug/L 1,2-Dichloroethane 25.0 28.3 ug/L 113 60 - 140 Trichloroethene 25.0 26.8 107 70 - 125 ug/L

LCS LCS %Recovery Qualifier Surrogate Limits 80 - 120 4-Bromofluorobenzene (Surr) 112 Dibromofluoromethane (Surr) 105 80 - 120 Toluene-d8 (Surr) 104 80 - 120

Lab Sample ID: 440-8650-A-3 MS Client Sample ID: Matrix Spike Prep Type: Total/NA

Matrix: Water

Analysis Batch: 20297

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	ND		25.0	22.7		ug/L		91	60 - 130	
1,2-Dichloroethane	ND		25.0	27.5		ug/L		110	60 - 140	
Trichloroethene	84		25.0	106		ug/L		88	65 - 125	

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	114		80 - 120
Dibromofluoromethane (Surr)	105		80 - 120
Toluene-d8 (Surr)	106		80 - 120

Analysis Batch: 20297

Matrix: Water

Project/Site: Routine Outfall 002 Grab

Lab Sample ID: 440-8650-A-3 MSD

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

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

TestAmerica Job ID: 440-8624-1

Prep Type: Total/NA

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1-Dichloroethene	ND		25.0	23.1		ug/L		92	60 - 130	1.75	20
1,2-Dichloroethane	ND		25.0	27.1		ug/L		108	60 - 140	1.47	20
Trichloroethene	84		25.0	102		ug/L		72	65 - 125	3.66	20

MSD MSD Surrogate Qualifier Limits %Recovery 4-Bromofluorobenzene (Surr) 110 80 - 120 Dibromofluoromethane (Surr) 103 80 - 120 104 80 - 120 Toluene-d8 (Surr)

Lab Sample ID: MB 440-20367/4 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 20367

мв мв Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Analyte 0.50 04/18/12 08:57 1,1-Dichloroethene ND 0.42 ug/L 1,2-Dichloroethane ND 0.50 0.28 ug/L 04/18/12 08:57 Trichloroethene ND 0.50 04/18/12 08:57 0.26 ug/L

MB MB %Recovery Qualifier Dil Fac Surrogate Limits Prepared Analyzed 4-Bromofluorobenzene (Surr) 89 80 - 120 04/18/12 08:57 Dibromofluoromethane (Surr) 94 80 - 120 04/18/12 08:57 1 Toluene-d8 (Surr) 101 80 - 120 04/18/12 08:57

Lab Sample ID: LCS 440-20367/6

Matrix: Water

Analysis Batch: 20367

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	 25.0	24.7		ug/L		99	70 - 125	
1,2-Dichloroethane	25.0	24.1		ug/L		96	60 - 140	
Trichloroethene	25.0	24.9		ug/L		100	70 - 125	

LCS LCS Surrogate %Recovery Qualifier Limits 80 - 120 4-Bromofluorobenzene (Surr) 100 Dibromofluoromethane (Surr) 94 80 - 120 80 - 120 Toluene-d8 (Surr) 98

Lab Sample ID: 440-8281-B-1 MS Client Sample ID: Matrix Spike

Matrix: Water

Analysis Batch: 20367										
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	ND		25.0	24.6		ug/L		98	60 _ 130	
1,2-Dichloroethane	ND		25.0	25.1		ug/L		100	60 - 140	
Trichloroethene	1.2		25.0	26.4		ug/L		101	65 - 125	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)	99		80 - 120							

Prep Type: Total/NA

Project/Site: Routine Outfall 002 Grab

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

Lab Sample ID: 440-8281-B-1 MS

Lab Sample ID: 440-8281-B-1 MSD

Matrix: Water

Analysis Batch: 20367

Client Sample ID: Matrix Spike

Prep Type: Total/NA

MS MS

%Recovery Qualifier Limits Surrogate Dibromofluoromethane (Surr) 98 80 - 120 Toluene-d8 (Surr) 100 80 - 120

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Matrix: Water

Analysis Batch: 20367

	Samı	le Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Res	ılt Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1-Dichloroethen	e <u> </u>	D	25.0	24.9		ug/L		100	60 - 130	1	20
1,2-Dichloroethan	e 1	D	25.0	25.0		ug/L		100	60 - 140	0	20
Trichloroethene		.2	25.0	26.3		ug/L		100	65 - 125	0	20

MSD MSD Limits %Recovery Qualifier Surrogate 4-Bromofluorobenzene (Surr) 100 80 - 120 99 80 - 120 Dibromofluoromethane (Surr) Toluene-d8 (Surr) 99 80 - 120

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

Lab Sample ID: MB 440-21041/1-A

Matrix: Water

Analysis Batch: 21217

Client Sample ID: Method Blank	
Prep Type: Total/NA	
Prep Batch: 21041	

мв мв Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac 5.00 04/20/12 14:44 Bis(2-ethylhexyl) phthalate ND 1.70 ug/L 04/22/12 17:08 2,4-Dinitrotoluene ND 5.00 0.200 ug/L 04/20/12 14:44 04/22/12 17:08 ND 1.00 04/20/12 14:44 2,4,6-Trichlorophenol 0.100 ug/L 04/22/12 17:08 ND Pentachlorophenol 2.00 0.400 ug/L 04/20/12 14:44 04/22/12 17:08 N-Nitrosodimethylamine ND 2.00 0.100 ug/L 04/20/12 14:44 04/22/12 17:08

	MB	MB			
Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed Dil Fac	;
2-Fluorobiphenyl	90		50 - 120	04/20/12 14:44	
2-Fluorophenol	75		30 - 120	04/20/12 14:44	
2,4,6-Tribromophenol	118		40 - 120	04/20/12 14:44	
Nitrobenzene-d5	90		45 - 120	04/20/12 14:44	
Terphenyl-d14	101		50 - 125	04/20/12 14:44	
Phenol-d6	89		35 - 120	04/20/12 14:44	
	2-Fluorobiphenyl 2-Fluorophenol 2,4,6-Tribromophenol Nitrobenzene-d5 Terphenyl-d14	Surrogate %Recovery 2-Fluorobiphenyl 90 2-Fluorophenol 75 2,4,6-Tribromophenol 118 Nitrobenzene-d5 90 Terphenyl-d14 101	2-Fluorobiphenyl 90 2-Fluorophenol 75 2,4,6-Tribromophenol 118 Nitrobenzene-d5 90 Terphenyl-d14 101	Surrogate %Recovery Qualifier Limits 2-Fluorobiphenyl 90 50 - 120 2-Fluorophenol 75 30 - 120 2,4,6-Tribromophenol 118 40 - 120 Nitrobenzene-d5 90 45 - 120 Terphenyl-d14 101 50 - 125	Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Factors 2-Fluorobiphenyl 90 50 - 120 04/20/12 14:44 04/22/12 17:08 1 2-Fluorophenol 75 30 - 120 04/20/12 14:44 04/22/12 17:08 1 2,4,6-Tribromophenol 118 40 - 120 04/20/12 14:44 04/22/12 17:08 1 Nitrobenzene-d5 90 45 - 120 04/20/12 14:44 04/22/12 17:08 1 Terphenyl-d14 101 50 - 125 04/20/12 14:44 04/22/12 17:08 1

Lab Sample ID: LCS 440-21041/2-A

Matrix: Water

Analysis Batch: 21217

Client Sample ID: La	b Control Sample
Pro	ep Type: Total/NA
	Prep Batch: 21041

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Bis(2-ethylhexyl) phthalate	10.0	11.26		ug/L		113	65 - 130	
2,4,6-Trichlorophenol	10.0	10.26		ug/L		103	55 - 120	
Pentachlorophenol	10.0	9.320		ug/L		93	24 - 121	
N-Nitrosodimethylamine	10.0	8.320		ug/L		83	45 - 120	

TestAmerica Job ID: 440-8624-1

Client: MWH Americas Inc

Project/Site: Routine Outfall 002 Grab

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

Lab Sample ID: LCS 440-21041/2-A

Matrix: Water

Analysis Batch: 21217

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

Prep Batch: 21041

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	97		50 - 120
2-Fluorophenol	74		30 - 120
2,4,6-Tribromophenol	105		40 - 120
Nitrobenzene-d5	96		45 - 120
Terphenyl-d14	105		50 - 125
Phenol-d6	89		35 - 120

Lab Sample ID: 440-8891-A-1-A MS Client Sample ID: Matrix Spike

Matrix: Water

Analysis Batch: 21217

Prep Type: Total/NA

Prep Batch: 21041

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Bis(2-ethylhexyl) phthalate	ND		9.48	13.50	J,DX AY	ug/L		142	65 - 130	
2,4,6-Trichlorophenol	ND		9.48	9.782		ug/L		103	55 - 120	
Pentachlorophenol	ND		9.48	7.886		ug/L		83	24 - 121	
N-Nitrosodimethylamine	ND		9.48	6.781	J,DX	ug/L		72	45 _ 120	

	IVIS	IVIS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	93		50 - 120
2-Fluorophenol	76		30 - 120
2,4,6-Tribromophenol	120		40 - 120
Nitrobenzene-d5	95		45 - 120
Terphenyl-d14	121		50 - 125
Phenol-d6	90		35 - 120
, ,			

Lab Sample ID: 440-8891-A-1-B MSD

Matrix: Water

Analysis Batch: 21217

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 21041

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Bis(2-ethylhexyl) phthalate	ND		9.52	14.32	J,DX LM	ug/L		150	65 - 130	6	25	
2,4,6-Trichlorophenol	ND		9.52	9.981		ug/L		105	55 - 120	2	30	
Pentachlorophenol	ND		9.52	7.253	J,DX	ug/L		76	24 - 121	8	25	
N-Nitrosodimethylamine	ND		9.52	7.476	J,DX	ug/L		78	45 - 120	10	25	

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	94		50 - 120
2-Fluorophenol	80		30 - 120
2,4,6-Tribromophenol	120		40 - 120
Nitrobenzene-d5	99		45 - 120
Terphenyl-d14	124		50 - 125
Phenol-d6	88		35 _ 120

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Method: 608 Pesticides - Organochlorine Pesticides Low level

Lab Sample ID: MB 440-19875/1-A

Matrix: Water

Analysis Batch: 19946

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 19875

мв мв

Result Qualifier RL MDL Unit Analyte D Prepared Analyzed Dil Fac alpha-BHC 0.0050 0.0025 ug/L 04/15/12 14:34 04/16/12 12:21 ND

MB MB

Qualifier Limits Dil Fac Surrogate %Recovery Prepared Analyzed 35 _ 115 04/15/12 14:34 04/16/12 12:21 Tetrachloro-m-xylene 82

Lab Sample ID: LCS 440-19875/2-A

Matrix: Water

Analysis Batch: 19946

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

Prep Batch: 19875

LCS LCS Spike Added Qualifier Analyte Result Unit Limits %Rec alpha-BHC 0.500 98 0.489 45 - 115 ug/L

LCS LCS

Surrogate %Recovery Qualifier Limits 35 - 115 Tetrachloro-m-xylene 80

Lab Sample ID: LCSD 440-19875/3-A

Matrix: Water

Analysis Batch: 19946

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 19875

%Rec. RPD

Added Qualifier RPD Analyte Result Unit D %Rec Limits Limit alpha-BHC 0.500 0.460 ug/L 92 45 - 115 30 6 11

Spike

LCSD LCSD

LCSD LCSD

MR MR

Surrogate %Recovery Qualifier Limits Tetrachloro-m-xylene 76 35 - 115

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-19784/2

Matrix: Water

Analysis Batch: 19784

Client Sample ID: Method Blank

Prep Type: Total/NA

Qualifier RL MDL Unit Dil Fac Result Prepared Analyzed Nitrate as N ND 0.11 0.080 mg/L 04/14/12 10:38 Nitrate Nitrite as N ND 0.26 0.19 mg/L 04/14/12 10:38 Nitrite as N ND 0.15 0.11 mg/L 04/14/12 10:38

Lab Sample ID: LCS 440-19784/3

Matrix: Water

Analysis Batch: 19784

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

LCS LCS Spike %Rec. Added Result Qualifier Analyte Unit %Rec Limits Nitrate as N 1.13 1.09 97 90 - 110 mg/L Nitrate Nitrite as N 2.65 2.53 mg/L 95 90 - 110 Nitrite as N 1.52 1.44 mg/L 95 90 - 110

> TestAmerica Irvine 5/20/2012

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 440-8670-A-1 MS

Matrix: Water

Analysis Batch: 19784

Client Sample ID: Matrix Spike

Prep Type: Total/NA

		Sample	Sample	Spike	MS	MS				%Rec.		
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
	Nitrate as N	0.26		1.13	1.30		mg/L		92	80 - 120	 	
ı	Nitrate Nitrite as N	0.39		2.65	2.80		mg/L		91	80 - 120		
	Nitrite as N	0.13	J,DX	1.52	1.50		mg/L		90	80 - 120		

Lab Sample ID: 440-8670-A-1 MSD

Matrix: Water

Analysis Batch: 19784

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

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Nitrate as N	0.26		1.13	1.27		mg/L		89	80 - 120	2	20
Nitrate Nitrite as N	0.39		2.65	2.75		mg/L		89	80 - 120	2	20
Nitrite as N	0.13	J,DX	1.52	1.48		mg/L		89	80 - 120	1	20

Lab Sample ID: MB 440-19785/2

Matrix: Water

Analysis Batch: 19785

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

Client Sample ID: Lab Control Sample

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

мв мв Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Chloride ND 0.50 0.40 mg/L 04/14/12 10:38 Sulfate ND 0.50 0.40 mg/L 04/14/12 10:38

Lab Sample ID: LCS 440-19785/3

Matrix: Water

Analysis Batch: 19785									
	Spike	LCS	LCS				%Rec.		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	 5.00	4.68		mg/L		94	90 - 110		_
Sulfate	10.0	9.37		mg/L		94	90 - 110		

Analysis Batch: 19785

_	
Lab Sample ID: 440-8670-A-1 MS	Client Sample ID: Matrix Spike
Matrix: Water	Prep Type: Total/NA

	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	0.93		5.00	5.48		mg/L		91	80 - 120		_
Sulfate	1.4		10.0	10.7		mg/L		93	80 - 120		

Lab Sample ID: 440-8670-A-1 MSD

Matrix: Water

Analysis Batch: 19785

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	0.93		5.00	5.46		mg/L		90	80 - 120	0	20
Sulfate	1.4		10.0	10.8		mg/L		94	80 - 120	1	20

TestAmerica Irvine 5/20/2012

Prep Type: Total/NA

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 440-20654/36

Matrix: Water

Analysis Batch: 20654

мв мв

Result Qualifier RL MDL Unit Dil Fac Analyte D Prepared Analyzed Perchlorate 4.0 0.95 ug/L 04/19/12 19:22 ND

Lab Sample ID: LCS 440-20654/37

Matrix: Water

Analysis Batch: 20654

Spike LCS LCS %Rec. Added Result Qualifier Analyte Unit %Rec Limits Perchlorate 25.0 26.6 ug/L 106 85 - 115

Lab Sample ID: 440-8689-I-1 MS

Matrix: Water

Analysis Batch: 20654

Sample Sample Spike MS MS %Rec. Added Analyte Result Qualifier Result Qualifier Unit %Rec Limits Perchlorate 1.4 J,DX 25.0 20.8 LN 80 - 120 ug/L

Lab Sample ID: 440-8689-I-1 MSD

Matrix: Water

Analysis Batch: 20654

Allalysis Datell. 20004											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	9	%Rec	Limits	RPD	Limit
Perchlorate	1.4	J,DX	25.0	22.8		ug/L		86	80 - 120	9.17	20

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

Lab Sample ID: G2D230000077B

Matrix: Water

Analysis Batch: 2114077

Client Sample ID: Method Blank **Prep Type: Total** Prep Batch: 2114077_P

Analysis Buton. El 14011								Trop Buton: 21140				
	MB	MB										
Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac			
2,3,7,8-TCDD	ND		0.000010	0.00000093	ug/L		04/23/12 09:00	04/24/12 16:35	1			
Total TCDD	0.0000038	JQ	0.000010	0.00000041	ug/L		04/23/12 09:00	04/24/12 16:35	1			
1,2,3,7,8-PeCDD	ND		0.000050	0.0000014	ug/L		04/23/12 09:00	04/24/12 16:35	1			
Total PeCDD	ND		0.000050	0.0000014	ug/L		04/23/12 09:00	04/24/12 16:35	1			
1,2,3,4,7,8-HxCDD	0.0000011	JQ	0.000050	0.00000013	ug/L		04/23/12 09:00	04/24/12 16:35	1			
1,2,3,6,7,8-HxCDD	0.0000017	J	0.000050	0.00000013	ug/L		04/23/12 09:00	04/24/12 16:35	1			
1,2,3,7,8,9-HxCDD	0.0000024	J	0.000050	0.00000011	ug/L		04/23/12 09:00	04/24/12 16:35	1			
Total HxCDD	0.0000053	JQ	0.000050	0.00000012	ug/L		04/23/12 09:00	04/24/12 16:35	1			
1,2,3,4,6,7,8-HpCDD	0.0000037	J	0.000050	0.00000057	ug/L		04/23/12 09:00	04/24/12 16:35	1			
Total HpCDD	0.0000064	J	0.000050	0.00000057	ug/L		04/23/12 09:00	04/24/12 16:35	1			
OCDD	0.000016	J	0.00010	0.000000040	ug/L		04/23/12 09:00	04/24/12 16:35	1			
2,3,7,8-TCDF	ND		0.000010	0.00000088	ug/L		04/23/12 09:00	04/24/12 16:35	1			
Total TCDF	ND		0.000010	0.00000088	ug/L		04/23/12 09:00	04/24/12 16:35	1			
1,2,3,7,8-PeCDF	0.0000031	JQ	0.000050	0.00000049	ug/L		04/23/12 09:00	04/24/12 16:35	1			
2,3,4,7,8-PeCDF	0.0000019	JQ	0.000050	0.00000048	ug/L		04/23/12 09:00	04/24/12 16:35	1			
Total PeCDF	0.0000050	JQ	0.000050	0.00000048	ug/L		04/23/12 09:00	04/24/12 16:35	1			
1,2,3,4,7,8-HxCDF	0.0000037	JQ	0.000050	0.000000030	ug/L		04/23/12 09:00	04/24/12 16:35	1			
1,2,3,6,7,8-HxCDF	0.0000020	J	0.000050	0.000000030	ug/L		04/23/12 09:00	04/24/12 16:35	1			
2,3,4,6,7,8-HxCDF	0.0000020	J	0.000050	0.000000030	ug/L		04/23/12 09:00	04/24/12 16:35	1			
1,2,3,7,8,9-HxCDF	0.0000016	JQ	0.000050	0.00000030	ug/L		04/23/12 09:00	04/24/12 16:35	1			

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

Lab	Sam	pie	ID:	GZD	230	UUU	J / /	5

Matrix: Water

Analysis Batch: 2114077

Client Sample ID: Method Blank **Prep Type: Total**

Prep Batch: 2114077_P

ı										
	Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
	Total HxCDF	0.000011	JQ	0.000050	0.00000030	ug/L		04/23/12 09:00	04/24/12 16:35	1
١	1,2,3,4,6,7,8-HpCDF	0.0000035	J	0.000050	0.00000016	ug/L		04/23/12 09:00	04/24/12 16:35	1
١	1,2,3,4,7,8,9-HpCDF	0.0000041	J	0.000050	0.0000018	ug/L		04/23/12 09:00	04/24/12 16:35	1
١	Total HpCDF	0.0000094	J	0.000050	0.0000017	ug/L		04/23/12 09:00	04/24/12 16:35	1
١	OCDF	0.0000070	J	0.00010	0.00000031	ug/L		04/23/12 09:00	04/24/12 16:35	1

MB MB

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37CI4-2,3,7,8-TCDD	86		35 - 197	04/23/12 09:00	04/24/12 16:35	1

	MB	MB				
Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	41		25 - 164	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,7,8-PeCDD	50		25 - 181	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,7,8-HxCDD	54		32 - 141	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,6,7,8-HxCDD	53		28 - 130	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,6,7,8-HpCDD	72		23 - 140	04/23/12 09:00	04/24/12 16:35	1
13C-OCDD	56		17 - 157	04/23/12 09:00	04/24/12 16:35	1
13C-2,3,7,8-TCDF	34		24 - 169	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,7,8-PeCDF	39		24 - 185	04/23/12 09:00	04/24/12 16:35	1
13C-2,3,4,7,8-PeCDF	43		21 - 178	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,6,7,8-HxCDF	50		26 - 123	04/23/12 09:00	04/24/12 16:35	1
13C-2,3,4,6,7,8-HxCDF	47		28 - 136	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,7,8,9-HxCDF	50		29 - 147	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,6,7,8-HpCDF	52		28 - 143	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,7,8,9-HpCDF	58		26 - 138	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,7,8-HxCDF	47		26 - 152	04/23/12 09:00	04/24/12 16:35	1

Lab Sample ID: G2D230000077C

Matrix: Water

Analysis Batch: 2114077

Client Sample ID: I	Lab Control Sample
	Prep Type: Total

Prep Batch: 2114077_P

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
2,3,7,8-TCDD	0.000200	0.000181		ug/L		91	67 - 158
1,2,3,7,8-PeCDD	0.00100	0.000877		ug/L		88	70 - 142
1,2,3,4,7,8-HxCDD	0.00100	0.000920	В	ug/L		92	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000904	В	ug/L		90	76 ₋ 134
1,2,3,7,8,9-HxCDD	0.00100	0.000924	В	ug/L		92	64 - 162
1,2,3,4,6,7,8-HpCDD	0.00100	0.000954	В	ug/L		95	70 - 140
OCDD	0.00200	0.00188	В	ug/L		94	78 ₋ 144
2,3,7,8-TCDF	0.000200	0.000194		ug/L		97	75 - 158
1,2,3,7,8-PeCDF	0.00100	0.000945	В	ug/L		94	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000869	В	ug/L		87	68 - 160
1,2,3,4,7,8-HxCDF	0.00100	0.000957	В	ug/L		96	72 _ 134
1,2,3,6,7,8-HxCDF	0.00100	0.000963	В	ug/L		96	84 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000955	В	ug/L		95	70 - 156
1,2,3,7,8,9-HxCDF	0.00100	0.00101	В	ug/L		101	78 - 130
1,2,3,4,6,7,8-HpCDF	0.00100	0.000948	В	ug/L		95	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000904	В	ug/L		90	78 ₋ 138
OCDF	0.00200	0.00173	В	ug/L		87	63 - 170

Project/Site: Routine Outfall 002 Grab

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

Lab Sample ID: G2D230000077C **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total** Prep Batch: 2114077_P Analysis Batch: 2114077

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
37CI4-2,3,7,8-TCDD	85		31 - 191
	LCS	LCS	
Internal Standard	%Recovery	Qualifier	Limits
13C-2,3,7,8-TCDD	41		20 - 175
13C-1,2,3,7,8-PeCDD	48		21 - 227
13C-1,2,3,4,7,8-HxCDD	51		21 - 193
13C-1,2,3,6,7,8-HxCDD	50		25 - 163
13C-1,2,3,4,6,7,8-HpCDD	71		26 - 166
13C-OCDD	58		13 - 199
13C-2,3,7,8-TCDF	34		22 - 152
13C-1,2,3,7,8-PeCDF	36		21 - 192
12C 2 2 4 7 9 DoCDE	40		12 220

Internal Standard	%Recovery	Qualifier	Limits
13C-2,3,7,8-TCDD	41		20 - 175
13C-1,2,3,7,8-PeCDD	48		21 - 227
13C-1,2,3,4,7,8-HxCDD	51		21 - 193
13C-1,2,3,6,7,8-HxCDD	50		25 - 163
13C-1,2,3,4,6,7,8-HpCDD	71		26 - 166
13C-OCDD	58		13 - 199
13C-2,3,7,8-TCDF	34		22 - 152
13C-1,2,3,7,8-PeCDF	36		21 - 192
13C-2,3,4,7,8-PeCDF	40		13 - 328
13C-1,2,3,6,7,8-HxCDF	48		21 - 159
13C-2,3,4,6,7,8-HxCDF	44		22 - 176
13C-1,2,3,7,8,9-HxCDF	48		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	52		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	58		20 - 186

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MR MR

M	et	ho	d:	20	0.7	Rev	4.4	N	leta	ls ((ICP)
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Lab Sample ID: MB 440-21302/1-A

Matrix: Water

Analysis Batch: 21614

13C-1,2,3,4,7,8-HxCDF

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 21302

-	МВ	MB						-	
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.040	0.015	mg/L		04/23/12 10:11	04/24/12 11:42	1
Zinc	ND		20	6.0	ug/L		04/23/12 10:11	04/24/12 11:42	1

19 - 202

Lab Sample ID: LCS 440-21302/2-A **Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total Recoverable**

Prep Batch: 21302

Analysis Batch: 21614 Spike LCS LCS %Rec. Added Result Qualifier Analyte Unit %Rec Limits D Iron 0.500 0.506 mg/L 101 85 - 115 Zinc 500 502 ug/L 100 85 - 115

Lab Sample ID: MB 440-21521/1-A

Matrix: Water

Analysis Batch: 21778

Client Sample ID: Method Blank **Prep Type: Total Recoverable**

Prep Batch: 21521

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.040	0.015	mg/L		04/24/12 09:36	04/24/12 20:32	1
Zinc	ND		20	6.0	ug/L		04/24/12 09:36	04/24/12 20:32	1

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

Lab Sample ID: LCS 440-21521/2-A

Matrix: Water

Analysis Batch: 21778

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

Prep Batch: 21521

			Spike	LCS	LCS				%Rec.	
	Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Iron		0.500	0.484		mg/L	_	97	85 - 115	
ı	Zinc		500	501		ug/L		100	85 - 115	

Lab Sample ID: 440-8613-A-1-B MS

Matrix: Water

Analysis Batch: 21778

Client Sample ID: Matrix Spike **Prep Type: Total Recoverable**

Prep Batch: 21521

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Iron	0.038	J,DX	0.500	0.515		mg/L		95	70 - 130	
Zinc	25		500	504		ug/L		96	70 - 130	

Lab Sample ID: 440-8613-A-1-C MSD

Matrix: Water

Analysis Batch: 21778

Client Sample ID: Matrix Spike Duplicate **Prep Type: Total Recoverable**

Prep Batch: 21521

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Iron	0.038	J,DX	0.500	0.515		mg/L		95	70 - 130	0	20
Zinc	25		500	515		ug/L		98	70 - 130	2	20

Lab Sample ID: 440-8609-F-12-F MS

Matrix: Water

Analysis Batch: 21614

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 21302

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Iron	0.13		0.500	0.613		mg/L		97	70 - 130	
Zinc	ND		500	495		ug/L		99	70 - 130	

Lab Sample ID: 440-8609-F-12-G MSD

Matrix: Water

Analysis Batch: 21614

Client Sample ID: Matrix Spike Duplicate **Prep Type: Dissolved**

Prep Batch: 21302

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Iron	0.13		0.500	0.632		mg/L		101	70 - 130	3	20	
Zinc	ND		500	499		ug/L		100	70 - 130	1	20	

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-21402/1-A

Matrix: Water

Analysis Batch: 22628

Client Sample ID: Method Blank **Prep Type: Total Recoverable**

Prep Batch: 21402

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		04/23/12 17:06	04/28/12 18:39	1
Copper	ND		2.0	0.50	ug/L		04/23/12 17:06	04/28/12 18:39	1
Lead	ND		1.0	0.20	ug/L		04/23/12 17:06	04/28/12 18:39	1
Selenium	ND		2.0	0.50	ug/L		04/23/12 17:06	04/28/12 18:39	1

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Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

Lab Sample ID: LCS 440-21402/2-A

Matrix: Water

Analysis Batch: 22628

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

Prep Batch: 21402

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cadmium	80.0	79.1		ug/L	_	99	85 - 115	
Copper	80.0	76.4		ug/L		96	85 - 115	
Lead	80.0	79.2		ug/L		99	85 - 115	
Selenium	80.0	86.4		ug/L		108	85 - 115	

Lab Sample ID: 440-8779-K-1-D MS

Matrix: Water

Analysis Batch: 22628

Client Sample ID: Matrix Spike **Prep Type: Total Recoverable**

Prep Batch: 21402

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cadmium	ND		80.0	82.4		ug/L		103	70 - 130	
Copper	1.6	J,DX	80.0	74.7		ug/L		91	70 - 130	
Lead	ND		80.0	81.3		ug/L		102	70 - 130	
Selenium	1.0	J,DX	80.0	86.8		ug/L		107	70 - 130	

Lab Sample ID: 440-8779-K-1-E MSD

Matrix: Water

Analysis Batch: 22628

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total Recoverable

Prep Batch: 21402

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cadmium	ND		80.0	80.2		ug/L		100	70 - 130	3	20
Copper	1.6	J,DX	80.0	73.3		ug/L		90	70 - 130	2	20
Lead	ND		80.0	81.7		ug/L		102	70 - 130	1	20
Selenium	1.0	J,DX	80.0	85.1		ug/L		105	70 - 130	2	20

Lab Sample ID: MB 440-20065/1-B

Matrix: Water

Analysis Batch: 23203

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 21301

MB MB

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND —	1.0	0.10 ug/L		04/23/12 10:08	05/01/12 22:05	1
Copper	ND	2.0	0.50 ug/L		04/23/12 10:08	05/01/12 22:05	1
Lead	ND	1.0	0.20 ug/L		04/23/12 10:08	05/01/12 22:05	1
Selenium	ND	2.0	0.50 ug/L		04/23/12 10:08	05/01/12 22:05	1

Lab Sample ID: LCS 440-20065/2-B

Matrix: Water

Analysis Batch: 23203

Client Sample ID: Lab Control Sample

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Type: Dissolved

Prep Batch: 21301

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cadmium	80.0	84.5		ug/L		106	85 _ 115	
Copper	80.0	82.7		ug/L		103	85 - 115	
Lead	80.0	75.8		ug/L		95	85 _ 115	
Selenium	80.0	77.3		ua/l		97	85 - 115	

Lab Sample ID: 440-8609-F-11-E MS

Matrix: Water

Analysis Batch: 23203										Prep	Batch: 21301
	Sample	Sample	Spike	MS	MS					%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	ı)	%Rec	Limits	
Cadmium	ND		80.0	85.8		ua/L			107	70 - 130	

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Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

Lab Sample ID: 440-8609-F-11-E MS

Matrix: Water

Analysis Batch: 23203

Client Sample ID: Matrix Spike **Prep Type: Dissolved**

Prep Batch: 21301

	Sample Sample	Spike	MS	MS				%Rec.	
Analyte	Result Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Copper	2.9	80.0	82.3		ug/L		99	70 - 130	
Lead	ND	80.0	76.3		ug/L		95	70 - 130	
Selenium	ND	80.0	77.3		ug/L		97	70 - 130	

Lab Sample ID: 440-8609-F-11-F MSD

Matrix: Water

Analysis Batch: 23203

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Prep Batch: 21301

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cadmium	ND		80.0	85.1		ug/L		106	70 - 130	1	20
Copper	2.9		80.0	82.2		ug/L		99	70 - 130	0	20
Lead	ND		80.0	76.2		ug/L		95	70 - 130	0	20
Selenium	ND		80.0	76.7		ug/L		96	70 - 130	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-20031/1-A

Matrix: Water

Analysis Batch: 20257

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 20031

MR MR

Analyte	Result Qualifi		MDL Uni	it D	Prepared	Analyzed	Dil Fac
Mercury	ND	0.20	0.10 ug/	L _	04/16/12 15:03	04/17/12 12:34	1

LCS LCS

Lab Sample ID: LCS 440-20031/2-A

Matrix: Water

Analysis Batch: 20257

Client	Sample	ID:	Lab	Contr	ol S	a	mple	
			_	_	_			

Prep Type: Total/NA Prep Batch: 20031

%Rec.

Added Result Qualifier Analyte Unit D %Rec Limits Mercury 8.00 8.15 ug/L 102 85 - 115

Spike

Lab Sample ID: 440-8609-G-14-B MS

Matrix: Water

Matrix: Water

Analysis Batch: 20257

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 20031

Sample Sample Spike MS MS Added Analyte Result Qualifier Result Qualifier %Rec Limits Unit D 8.00 98 Mercury ND 7.88 ug/L 70 - 130

Lab Sample ID: 440-8609-G-14-C MSD

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA Prep Batch: 20031

Sample Sample Spike MSD MSD %Rec. RPD Result Qualifier Added Analyte Result Qualifier Unit D %Rec Limits RPD Limit Mercury ND 8.00 8.03 ug/L 100 70 - 130

Lab Sample ID: MB 440-19679/1-C

Matrix: Water

Analysis Batch: 20502

Analysis Batch: 20257

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 20049

мв мв Analyte Result Qualifier RL MDL Unit Prepared Dil Fac ND 0.20 0.10 ug/L 04/16/12 15:30 04/18/12 12:13 Mercury

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 440-19679/2-C Client Sample ID: Lab Control Sample **Matrix: Water**

LCS LCS

Analysis Batch: 20502

Prep Type: Dissolved

Prep Batch: 20049

Added Result Qualifier Limits Analyte Unit D %Rec 8.00 85 - 115 Mercury 8.17 ug/L 102

Spike

Lab Sample ID: 440-8443-G-1-C MS Client Sample ID: Matrix Spike **Matrix: Water**

Analysis Batch: 20502

Prep Type: Dissolved Prep Batch: 20049

MS Sample Sample Spike MS Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits Mercury ND 8.00 8.10 ug/L 101 70 - 130

Lab Sample ID: 440-8443-G-1-D MSD Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Analysis Batch: 20502

Prep Type: Dissolved

Prep Batch: 20049

Spike MSD MSD %Rec. RPD Sample Sample Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit ND 8.00 8.18 102 Mercury ug/L 1.00 20

Method: 120.1 - Conductivity, Specific Conductance

Lab Sample ID: MB 440-19954/1 Client Sample ID: Method Blank Prep Type: Total/NA

Matrix: Water

Analysis Batch: 19954

MR MR

Result Qualifier RL Unit Analyzed Dil Fac Prepared ND 1.0 04/16/12 10:13 Specific Conductance 10 umhos/cm

Lab Sample ID: LCS 440-19954/2 Client Sample ID: Lab Control Sample Prep Type: Total/NA

Matrix: Water

Analysis Batch: 19954

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec 501 Specific Conductance 548 umhos/cm 109 90 - 110

Lab Sample ID: 440-8522-A-2 DU **Client Sample ID: Duplicate**

Matrix: Water

Analysis Batch: 19954

Prep Type: Total/NA

DU DU Sample Sample RPD Result Qualifier RPD Analyte Result Qualifier Unit Limit Specific Conductance 750 755 umhos/cm 5

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-22035/1-A Client Sample ID: Method Blank

Matrix: Water

Analysis Batch: 22042

Prep Type: Total/NA Prep Batch: 22035

мв мв

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac HEM ND 5.0 1.4 mg/L 04/26/12 07:22 04/26/12 07:38

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

Lab Sample ID: LCS 440-22035/2-A

Analysis Batch: 22042

Matrix: Water

Spike Added 20.0

LCS LCS Result Qualifier 18.1

Unit mg/L D %Rec 91

Limits 78 - 114

Client Sample ID: Lab Control Sample

Lab Sample ID: LCSD 440-22035/3-A

Matrix: Water

Analyte

HEM

HEM

Analysis Batch: 22042

Analyte

Spike Added

20.0

LCSD LCSD Result Qualifier 18.5

Unit mg/L

%Rec

Limits 78 - 114

93

Client Sample ID: Lab Control Sample Dup

RPD

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 22035

Limit

11

Prep Batch: 22035

Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 440-19825/6

Matrix: Water

Turbidity

Analysis Batch: 19825

MR MR

Analyte

Result Qualifier ND

RL 0.10

Spike

Added

1.00

MDL Unit 0.040 NTU Prepared

D

%Rec

106

Analyzed 04/14/12 17:41

Client Sample ID: Lab Control Sample

%Rec.

Limits

Client Sample ID: Method Blank

Dil Fac

Lab Sample ID: MRL 440-19825/4 MRL

Matrix: Water

Analysis Batch: 19825

Analyte

Turbidity Lab Sample ID: 440-8689-L-1 DU

Matrix: Water

Turbidity

Analysis Batch: 19825 Analyte

Sample Sample Result Qualifier

390

DU DU Result Qualifier 381

MRL MRL

Qualifier

Unit

NTU

Result

1.06

Unit NTU

RPD RPD Limit

Prep Type: Total/NA

Prep Type: Total/NA

20

Prep Type: Total/NA

Client Sample ID: Duplicate

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

Lab Sample ID: MB 440-19957/1

Matrix: Water

Analysis Batch: 19957

Total Dissolved Solids

Total Dissolved Solids

мв мв

Result Qualifier ND

RL MDL Unit 10 10 mg/L

Prepared

Analyzed 04/16/12 10:21

Client Sample ID: Method Blank

Dil Fac

Lab Sample ID: LCS 440-19957/2 **Client Sample ID: Lab Control Sample Matrix: Water**

Analysis Batch: 19957

Analyte

Added 1000

Spike

LCS LCS Result Qualifier 934

Unit mg/L

%Rec 93

Limits

90 - 110

%Rec.

TestAmerica Irvine 5/20/2012

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Prep Type: Total/NA

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 22248

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

Lab Sample ID: 440-8418-B-1 DU

Matrix: Water

Analysis Batch: 19957

Client Sample ID: Duplicate Prep Type: Total/NA

DU DU RPD Sample Sample Result Qualifier RPD Result Qualifier D Limit Unit

Analyte 3.00 **Total Dissolved Solids** 2600 2710 mg/L 10

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

Lab Sample ID: MB 440-21096/1 Client Sample ID: Method Blank

Matrix: Water

Analysis Batch: 21096

мв мв

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Total Suspended Solids ND 10 10 mg/L 04/20/12 19:12

Lab Sample ID: LCS 440-21096/2 Client Sample ID: Lab Control Sample Prep Type: Total/NA

Matrix: Water

Analysis Batch: 21096

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits Total Suspended Solids 1000 995 mg/L 100 85 - 115

Lab Sample ID: 440-8678-A-1 DU

Matrix: Water

Analysis Batch: 21096

DU DU Sample Sample RPD Analyte Result Qualifier Result Qualifier Unit Limit 17.0 0.000 Total Suspended Solids 17 mg/L 10

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

Lab Sample ID: MB 440-22248/1-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 22273

MB MB Result MDI Unit Analyte Qualifier RI D

Prepared Analyzed Dil Fac 5.0 04/26/12 18:24 Cyanide, Total ND 3.0 ug/L 04/26/12 21:25

Analysis Batch: 22273

Lab Sample ID: LCS 440-22248/2-A Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA Prep Batch: 22248

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

Lab Sample ID: 440-9403-A-1-A MS

Matrix: Water

Analysis Batch: 22273

Prep Batch: 22248 Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Cyanide, Total ND 100 104 ug/L 104 70 - 115

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Client Sample ID: Matrix Spike

Prep Type: Total/NA

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Prep Type: Total/NA

Prep Batch: 22259

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

Lab Sample ID: 440-9403-A-1-C MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 22273 Prep Batch: 22248

Spike MSD MSD Sample Sample Added Result Qualifier Result Qualifier %Rec Limits RPD Limit Analyte Unit D 100 Cyanide, Total ND 108 ug/L 108 70 - 115 4 15

Method: SM 4500 NH3 C - Ammonia

Lab Sample ID: MB 440-22259/1-A Client Sample ID: Method Blank

Matrix: Water Analysis Batch: 22271

Ammonia (as N)

мв мв

Analyte Result Qualifier RLMDL Unit D Prepared Analyzed Dil Fac 0.400 mg/L 04/26/12 19:26 04/26/12 21:20 Ammonia (as N) ND 0.157

Lab Sample ID: LCS 440-22259/2-A Client Sample ID: Lab Control Sample

Matrix: Water Prep Type: Total/NA **Analysis Batch: 22271** Prep Batch: 22259

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits

Ammonia (as N) 10.0 9.800 mg/L 85 - 115

Client Sample ID: Outfall 002 Composite

Lab Sample ID: 440-8694-1 MS **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 22271 Prep Batch: 22259 Sample Sample Spike MS MS %Rec.

Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 0.280 10.0 9.520 Ammonia (as N) JDX 92 70 - 120 mg/L

Lab Sample ID: 440-8694-1 MSD Client Sample ID: Outfall 002 Composite

Matrix: Water Prep Type: Total/NA

Analysis Batch: 22271 Prep Batch: 22259 Sample Sample Spike MSD MSD %Rec. RPD Result Qualifier babbA Result Qualifier Limits RPD Limit Analyte Unit D %Rec

10.08

mg/L

10.0

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

0.280

J,DX

Lab Sample ID: MB 440-19842/3 Client Sample ID: Method Blank

Matrix: Water Prep Type: Total/NA **Analysis Batch: 19842**

MB MB

Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Methylene Blue Active Substances ND 0.10 0.050 mg/L 04/14/12 21:15

Lab Sample ID: LCS 440-19842/4 **Client Sample ID: Lab Control Sample**

Matrix: Water Prep Type: Total/NA **Analysis Batch: 19842**

Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits

0.250 0.272 mg/L 109 90 - 110 Methylene Blue Active Substances

98

70 - 120

15

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Type: Total/NA Prep Batch: 8612_P

Client Sample ID: Method Blank

Client: MWH Americas Inc

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

Lab Sample ID: 440-8672-A-2 MS

Matrix: Water

Analysis Batch: 19842

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

Spike MS MS %Rec. Sample Sample Result Qualifier babbA Result Qualifier %Rec Limits Analyte Unit D 0.250 0.13 0.370 mg/L 97 50 _ 125 Methylene Blue Active Substances

Lab Sample ID: 440-8672-A-2 MSD

Matrix: Water

Analysis Batch: 19842

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 0.13 0.250 0.387 mg/L 104 50 - 125 5 20 Methylene Blue Active Substances

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 440-19862/1 USB

Matrix: Water

Analysis Batch: 19862

USB USB

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Biochemical Oxygen Demand 2.0 0.50 mg/L 04/15/12 12:00 ND

Lab Sample ID: LCS 440-19862/4

Matrix: Water

Analysis Batch: 19862

LCS LCS Spike %Rec. Added Result Qualifier Unit D %Rec Limits **Biochemical Oxygen Demand** 199 210 mg/L 106 85 - 115

Lab Sample ID: LCSD 440-19862/5

Matrix: Water

Analysis Batch: 19862

LCSD LCSD %Rec. RPD Spike Analyte Added Result Qualifier Unit %Rec Limits RPD Limit 199 214 85 - 115 Biochemical Oxygen Demand 108 1 89 20 mg/L

Method: Gross Alpha and Beta - Gross Alpha/Beta

Lab Sample ID: S204070-04 Client Sample ID: Method Blank

Matrix: WATER

Analysis Batch: 8612

Prep Batch: 8612_P Blank Blank Result Qualifier RL MDL Unit Dil Fac Analyte D Prepared Analyzed Tritium 04/19/12 00:00 04/19/12 20:21 60 U 500 pCi/L

Lab Sample ID: S204070-04

Matrix: WATER Analysis Batch: 8612

Blank Blank Result Qualifier Analyte RL MDL Unit Prepared Analyzed Dil Fac 04/26/12 00:00 Strontium-90 0.067 U pCi/L 04/26/12 12:35

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Project/Site: Routine Outfall 002 Grab

Lab Sample ID: S204070-04

TestAmerica Job ID: 440-8624-1

Client Sample ID: Method Blank

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

Lab Sample ID: S204070-04 Client Sample ID: Method Blank **Matrix: WATER** Prep Type: Total/NA Prep Batch: 8612_P **Analysis Batch: 8612** Rlank Rlank

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	-0.94	U	20		pCi/L		04/26/12 00:00	04/27/12 00:00	1
Potassium-40	1.73	U	25		pCi/L		04/26/12 00:00	04/27/12 00:00	1

Matrix: WATER Prep Type: Total/NA Prep Batch: 8612_P **Analysis Batch: 8612**

		ыапк								
Analyte	Result	Qualifier	RL	MDL	Unit	Ι	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0	U	1		pCi/L			04/27/12 00:00	04/27/12 09:20	1

Lab Sample ID: S204070-04 Client Sample ID: Method Blank **Matrix: WATER** Prep Type: Total/NA

Analysis Batch: 8612 Prep Batch: 8612_P Blank Blank

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.192	U	3		pCi/L		04/26/12 00:00	04/30/12 08:23	1
Gross Beta	0.051	U	4		pCi/L		04/26/12 00:00	04/30/12 08:23	1

Lab Sample ID: S204070-04 Client Sample ID: Method Blank **Matrix: WATER** Prep Type: Total/NA

Analysis Batch: 8612 Prep Batch: 8612_P Blank Blank

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	-0.122 U	1	pCi/L		04/30/12 00:00	04/30/12 14:11	1

Lab Sample ID: S204070-04 Client Sample ID: Method Blank

Matrix: WATER Prep Type: Total/NA **Analysis Batch: 8612** Prep Batch: 8612_P Blank Blank

Analyte Result Qualifier Unit Analyzed Dil Fac RL Prepared Radium-226 0.182 U 1 pCi/L 05/04/12 00:00 05/04/12 13:45

Lab Sample ID: S204070-03					Client	Sample	ID: Lab Control Sample
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8612							Prep Batch: 8612_P
	Spike	LCS	LCS				%Rec.
Analyta	Addad	Dogult	Ouglifier	Heit		9/ Boo	Limita

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Tritium	2440	2380		pCi/L		98	80 - 120	

Lab Sample ID: S204070-03 **Client Sample ID: Lab Control Sample Matrix: WATER** Prep Type: Total/NA

Analysis Batch: 8612						Prep E	Batch: 8612_P
	Spike	LCS LCS				%Rec.	
Analyte	Added	Result Qualific	er Unit	D	%Rec	Limits	
Cesium-137	147	149	pCi/L		101	80 - 120	
Cobalt-60	130	126	pCi/L		97	80 - 120	

Matrix: WATER

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

Lab Sample ID: S204070-03					Client	Sample	ID: Lab Control Sample
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8612							Prep Batch: 8612_P
•	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Strontium-90	9.34	7.84		pCi/L		84	80 - 120
Lab Sample ID: S204070-03					Client	Sample	e ID: Lab Control Sample
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8612							Prep Batch: 8612_P
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Jranium, Total	56.5	64.2		pCi/L		114	80 - 120
Lab Sample ID: S204070-03					Client	Sample	e ID: Lab Control Sample
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8612							Prep Batch: 8612_F
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Radium-228	4.41	4.73	-	pCi/L		107	60 - 140
Lab Sample ID: S204070-03					Client	Sample	e ID: Lab Control Sample
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8612							Prep Batch: 8612_P
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gross Alpha	37	40.4		pCi/L		109	70 - 130
Gross Beta	34	32.6		pCi/L		96	70 - 130
_ab Sample ID: S204070-03					Client	Sample	e ID: Lab Control Sample
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8612							Prep Batch: 8612_P
	2						

Matrix: WATER							Prep T	ype: Total/NA
Analysis Batch: 8612							Prep B	Batch: 8612_P
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Radium-226	50.1	48.5		pCi/L		97	80 - 120	

Lab Sample ID: S204070-05 Client Sample ID: OUTFALL 002 (440-8694-1) DU **Matrix: WATER** Prep Type: Total/NA Prep Batch: 8612_P **Analysis Batch: 8612 Duplicate Duplicate** RPD Sample Sample Analyte Result Qualifier Result Qualifier Unit 19.4 U 18.5 U

Limit Tritium Lab Sample ID: S204070-05 Client Sample ID: OUTFALL 002 (440-8694-1) DU

Analysis Batch: 8612 Prep Batch: 8612_P Sample Sample **Duplicate Duplicate** RPD Analyte Result Qualifier Result Qualifier Unit Limit Strontium-90 -0.131 U 0.038 U pCi/L

Lab Sample ID: S204070-05 Client Sample ID: OUTFALL 002 (440-8694-1) DU **Matrix: WATER** Prep Type: Total/NA Prep Batch: 8612 P **Analysis Batch: 8612** Sample Sample **Duplicate Duplicate** RPD Analyte Result Qualifier Result Qualifier Unit D RPD Limit Cesium-137 0.152 U -0.761 U pCi/L 0

Prep Type: Total/NA

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

	Camala Camala	Dunlingto Dunlingto	DDD
Analysis Batch: 8612			Prep Batch: 8612_P
Matrix: WATER			Prep Type: Total/NA
Lab Sample ID: S204070-05		Client Sample ID: OUTFALL	002 (440-8694-1) DU

	Sample	Sample	Duplicate	Duplicate					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Potassium-40	-4.54	U	 3.82	U	pCi/L		 	0	

Lab Sample ID: S204070-05	Client Sample ID: OUTFALL 002 (440-8694-1) DU									
Matrix: WATER								Prep T	ype: To	al/NA
Analysis Batch: 8612								Prep E	Batch: 8	612_P
	Sample	Sample	Duplicate	Duplicate						RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D			RPD	Limit
Uranium, Total	0.172	J	 0.183	J	pCi/L				6	

Lab Sample ID: S204070-05		Client Sample ID: OUTFALL 002 (440-8694-									
Matrix: WATER							Prep Type: To	tal/NA			
Analysis Batch: 8612							Prep Batch: 8	612_P			
	Sample	Sample	Duplicate	Duplicate				RPD			
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit			
Radium-228	0.295	U	0.333	U	pCi/L						

Lab Sample ID: S204070-05					Client Sa	mple ID: OU	TFALL 002 (440-869	4-1) DU
Matrix: WATER							Prep Type: T	
Analysis Batch: 8612							Prep Batch:	8612_P
_	Sample	Sample	Duplicate	Duplicate			•	RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Gross Alpha	1.34	J	2.68	J	pCi/L		67	
Gross Beta	4.81		5.29		pCi/L		10	

	0	Donallanda Donallanda		DDD
Analysis Batch: 8612				Prep Batch: 8612_P
Matrix: WATER				Prep Type: Total/NA
Lab Sample ID: S204070-05			Client Sample ID	: OUTFALL 002 (440-8694-1) DU
Г				
Gross Beta	4.81	5.29	pCi/L	10

	Sample	Sample	Duplicate	Duplicate					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Radium-226	0.266	U	0.08	U	pCi/L	_		0	

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

GC/MS VOA

Analysis Batch: 20084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8624-2	Trip Blanks	Total/NA	Water	624	
440-8626-A-3 MS	Matrix Spike	Total/NA	Water	624	
440-8626-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
LCS 440-20084/5	Lab Control Sample	Total/NA	Water	624	
MB 440-20084/4	Method Blank	Total/NA	Water	624	

Analysis Batch: 20297

Lab Sample	ID Client Sample ID	Prep Typ	e Matrix	Metho	d Prep Batch
440-8624-1	Outfall 002	Total/NA	Water	624	
440-8650-A-	3 MS Matrix Spike	Total/NA	Water	624	
440-8650-A-	3 MSD Matrix Spike Duplicat	e Total/NA	Water	624	
LCS 440-202	297/5 Lab Control Sample	Total/NA	Water	624	
MB 440-202	97/4 Method Blank	Total/NA	Water	624	

Analysis Batch: 20367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
440-8281-B-1 MS	Matrix Spike	Total/NA	Water	624	
440-8281-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
440-8624-1	Outfall 002	Total/NA	Water	624	
LCS 440-20367/6	Lab Control Sample	Total/NA	Water	624	
MB 440-20367/4	Method Blank	Total/NA	Water	624	

GC/MS Semi VOA

Prep Batch: 21041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total/NA	Water	625	
440-8891-A-1-A MS	Matrix Spike	Total/NA	Water	625	
440-8891-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	625	
LCS 440-21041/2-A	Lab Control Sample	Total/NA	Water	625	
MB 440-21041/1-A	Method Blank	Total/NA	Water	625	

Analysis Batch: 21217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total/NA	Water	625	21041
440-8891-A-1-A MS	Matrix Spike	Total/NA	Water	625	21041
440-8891-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	625	21041
LCS 440-21041/2-A	Lab Control Sample	Total/NA	Water	625	21041
MB 440-21041/1-A	Method Blank	Total/NA	Water	625	21041

GC Semi VOA

Prep Batch: 19875

Lab Sample ID 440-8694-1	Client Sample ID Outfall 002 Composite	Prep Type Total/NA	Matrix Water	Method 608	Prep Batch
LCS 440-19875/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-19875/3-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-19875/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 19946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total/NA	Water	608 Pesticides	19875

TestAmerica Irvine 5/20/2012

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

GC Semi VOA (Continued)

Analysis Batch: 19946 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-19875/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	19875
LCSD 440-19875/3-A	Lab Control Sample Dup	Total/NA	Water	608 Pesticides	19875
MB 440-19875/1-A	Method Blank	Total/NA	Water	608 Pesticides	19875

HPLC/IC

Analysis Batch: 19784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8670-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-8670-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-8694-1	Outfall 002 Composite	Total/NA	Water	300.0	
LCS 440-19784/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-19784/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 19785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8670-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-8670-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-8694-1	Outfall 002 Composite	Total/NA	Water	300.0	
LCS 440-19785/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-19785/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 20654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-I-1 MS	Matrix Spike	Total/NA	Water	314.0	
440-8689-I-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	
440-8694-1	Outfall 002 Composite	Total/NA	Water	314.0	
LCS 440-20654/37	Lab Control Sample	Total/NA	Water	314.0	
MB 440-20654/36	Method Blank	Total/NA	Water	314.0	

Specialty Organics

Analysis Batch: 2114077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total	Water	1613B	
G2D230000077B	Method Blank	Total	Water	1613B	
G2D230000077C	Lab Control Sample	Total	Water	1613B	

Prep Batch: 2114077_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total	Water	3542	
G2D230000077B	Method Blank	Total	Water	3542	
G2D230000077C	Lab Control Sample	Total	Water	3542	

Metals

Prep Batch: 20031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-G-14-B MS	Matrix Spike	Total/NA	Water	245.1	
440-8609-G-14-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
440-8694-1	Outfall 002 Composite	Total/NA	Water	245.1	

TestAmerica Irvine 5/20/2012

QC Association Summary

Client: MWH Americas Inc

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Metals (Continued)

Prep Batch: 20031 (Continued)

l	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	LCS 440-20031/2-A	Lab Control Sample	Total/NA	Water	245.1	
١	MB 440-20031/1-A	Method Blank	Total/NA	Water	245.1	

Prep Batch: 20049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8443-G-1-C MS	Matrix Spike	Dissolved	Water	245.1	
440-8443-G-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	
440-8694-1	Outfall 002 Composite	Dissolved	Water	245.1	
LCS 440-19679/2-C	Lab Control Sample	Dissolved	Water	245.1	
MB 440-19679/1-C	Method Blank	Dissolved	Water	245.1	

Analysis Batch: 20257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-G-14-B MS	Matrix Spike	Total/NA	Water	245.1	20031
440-8609-G-14-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	20031
440-8694-1	Outfall 002 Composite	Total/NA	Water	245.1	20031
LCS 440-20031/2-A	Lab Control Sample	Total/NA	Water	245.1	20031
MB 440-20031/1-A	Method Blank	Total/NA	Water	245.1	20031

Analysis Batch: 20502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8443-G-1-C MS	Matrix Spike	Dissolved	Water	245.1	20049
440-8443-G-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	20049
440-8694-1	Outfall 002 Composite	Dissolved	Water	245.1	20049
LCS 440-19679/2-C	Lab Control Sample	Dissolved	Water	245.1	20049
MB 440-19679/1-C	Method Blank	Dissolved	Water	245.1	20049

Prep Batch: 21301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-F-11-E MS	Matrix Spike	Dissolved	Water	200.2	
440-8609-F-11-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
440-8694-1	Outfall 002 Composite	Dissolved	Water	200.2	
LCS 440-20065/2-B	Lab Control Sample	Dissolved	Water	200.2	
MB 440-20065/1-B	Method Blank	Dissolved	Water	200.2	

Prep Batch: 21302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-F-12-F MS	Matrix Spike	Dissolved	Water	200.2	
440-8609-F-12-G MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
440-8694-1	Outfall 002 Composite	Dissolved	Water	200.2	
LCS 440-21302/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-21302/1-A	Method Blank	Total Recoverable	Water	200.2	

Prep Batch: 21402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total Recoverable	Water	200.2	
440-8779-K-1-D MS	Matrix Spike	Total Recoverable	Water	200.2	
440-8779-K-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
LCS 440-21402/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-21402/1-A	Method Blank	Total Recoverable	Water	200.2	

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Metals (Continued)

Prep Batch: 21521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8613-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-8613-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
440-8694-1	Outfall 002 Composite	Total Recoverable	Water	200.2	
LCS 440-21521/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-21521/1-A	Method Blank	Total Recoverable	Water	200.2	

Analysis Batch: 21614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-F-12-F MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	21302
440-8609-F-12-G MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	21302
440-8694-1	Outfall 002 Composite	Dissolved	Water	200.7 Rev 4.4	21302
LCS 440-21302/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	21302
MB 440-21302/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	21302

Analysis Batch: 21778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8613-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	21521
440-8613-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	21521
440-8694-1	Outfall 002 Composite	Total Recoverable	Water	200.7 Rev 4.4	21521
LCS 440-21521/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	21521
MB 440-21521/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	21521

Analysis Batch: 22628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total Recoverable	Water	200.8	21402
440-8779-K-1-D MS	Matrix Spike	Total Recoverable	Water	200.8	21402
440-8779-K-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	21402
LCS 440-21402/2-A	Lab Control Sample	Total Recoverable	Water	200.8	21402
MB 440-21402/1-A	Method Blank	Total Recoverable	Water	200.8	21402

Analysis Batch: 23203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-F-11-E MS	Matrix Spike	Dissolved	Water	200.8	21301
440-8609-F-11-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	21301
440-8694-1	Outfall 002 Composite	Dissolved	Water	200.8	21301
LCS 440-20065/2-B	Lab Control Sample	Dissolved	Water	200.8	21301
MB 440-20065/1-B	Method Blank	Dissolved	Water	200.8	21301

General Chemistry

Analysis Batch: 19792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8624-1	Outfall 002	Total/NA	Water	SM 2540F	

Analysis Batch: 19825

ı	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	440-8689-L-1 DU	Duplicate	Total/NA	Water	180.1	
1	440-8694-1	Outfall 002 Composite	Total/NA	Water	180.1	
ı	MB 440-19825/6	Method Blank	Total/NA	Water	180.1	
1	MRL 440-19825/4 MRL	Lab Control Sample	Total/NA	Water	180.1	

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TestAmerica Job ID: 440-8624-1 Project/Site: Routine Outfall 002 Grab

General Chemistry (Continued)

Analysis Batch: 19842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8672-A-2 MS	Matrix Spike	Total/NA	Water	SM 5540C	
440-8672-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5540C	
440-8694-1	Outfall 002 Composite	Total/NA	Water	SM 5540C	
LCS 440-19842/4	Lab Control Sample	Total/NA	Water	SM 5540C	
MB 440-19842/3	Method Blank	Total/NA	Water	SM 5540C	

Analysis Batch: 19862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total/NA	Water	SM5210B	
LCS 440-19862/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-19862/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	
USB 440-19862/1 USB	Method Blank	Total/NA	Water	SM5210B	

Analysis Batch: 19954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8522-A-2 DU	Duplicate	Total/NA	Water	120.1	
440-8624-1	Outfall 002	Total/NA	Water	120.1	
LCS 440-19954/2	Lab Control Sample	Total/NA	Water	120.1	
MB 440-19954/1	Method Blank	Total/NA	Water	120.1	

Analysis Batch: 19957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8418-B-1 DU	Duplicate	Total/NA	Water	SM 2540C	
440-8694-1	Outfall 002 Composite	Total/NA	Water	SM 2540C	
LCS 440-19957/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-19957/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 21096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8678-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	
440-8694-1	Outfall 002 Composite	Total/NA	Water	SM 2540D	
LCS 440-21096/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-21096/1	Method Blank	Total/NA	Water	SM 2540D	

Prep Batch: 22035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8624-1	Outfall 002	Total/NA	Water	1664A	
LCS 440-22035/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-22035/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-22035/1-A	Method Blank	Total/NA	Water	1664A	

Analysis Batch: 22042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8624-1	Outfall 002	Total/NA	Water	1664A	22035
LCS 440-22035/2-A	Lab Control Sample	Total/NA	Water	1664A	22035
LCSD 440-22035/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	22035
MB 440-22035/1-A	Method Blank	Total/NA	Water	1664A	22035

Prep Batch: 22248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total/NA	Water	Distill/CN	
440-9403-A-1-A MS	Matrix Spike	Total/NA	Water	Distill/CN	

TestAmerica Irvine 5/20/2012

QC Association Summary

Client: MWH Americas Inc

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

General Chemistry (Continued)

Prep Batch: 22248 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-9403-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
LCS 440-22248/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-22248/1-A	Method Blank	Total/NA	Water	Distill/CN	

Prep Batch: 22259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total/NA	Water	SM 4500 NH3 B	
440-8694-1 MS	Outfall 002 Composite	Total/NA	Water	SM 4500 NH3 B	
440-8694-1 MSD	Outfall 002 Composite	Total/NA	Water	SM 4500 NH3 B	
LCS 440-22259/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 440-22259/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 22271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total/NA	Water	SM 4500 NH3 C	22259
440-8694-1 MS	Outfall 002 Composite	Total/NA	Water	SM 4500 NH3 C	22259
440-8694-1 MSD	Outfall 002 Composite	Total/NA	Water	SM 4500 NH3 C	22259
LCS 440-22259/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 C	22259
MB 440-22259/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 C	22259

Analysis Batch: 22273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total/NA	Water	SM 4500 CN E	22248
440-9403-A-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	22248
440-9403-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	22248
LCS 440-22248/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	22248
MB 440-22248/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	22248

Subcontract

Analysis Batch: 8612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total/NA	Water	Gamma Spec	8612_P
				K-40 CS-137	
440-8694-1	Outfall 002 Composite	Total/NA	Water	Gross Alpha	8612_P
				and Beta	
440-8694-1	Outfall 002 Composite	Total/NA	Water	Radium 226	8612_P
440-8694-1	Outfall 002 Composite	Total/NA	Water	Radium 228	8612_P
440-8694-1	Outfall 002 Composite	Total/NA	Water	Strontium 90	8612_P
440-8694-1	Outfall 002 Composite	Total/NA	Water	Tritium	8612_P
440-8694-1	Outfall 002 Composite	Total/NA	Water	Uranium,	8612_P
				Combined	
440-8694-2	Trip Blank	Total/NA	Water	Gamma Spec	8612_P
				K-40 CS-137	
440-8694-2	Trip Blank	Total/NA	Water	Gross Alpha	8612_P
				and Beta	
440-8694-2	Trip Blank	Total/NA	Water	Radium 226	8612_P
440-8694-2	Trip Blank	Total/NA	Water	Radium 228	8612_P
440-8694-2	Trip Blank	Total/NA	Water	Strontium 90	8612_P
440-8694-2	Trip Blank	Total/NA	Water	Uranium,	8612_P
				Combined	
S204070-03	Lab Control Sample	Total/NA	WATER	Gross Alpha	8612_P
				and Beta	

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QC Association Summary

Client: MWH Americas Inc

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Subcontract (Continued)

Analysis Batch: 8612 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
S204070-04	Method Blank	Total/NA	WATER	Gross Alpha	8612_P
				and Beta	
S204070-05	OUTFALL 002 (440-8694-1) DU	Total/NA	WATER	Gross Alpha	8612_P
_				and Beta	

Prep Batch: 8612_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8694-1	Outfall 002 Composite	Total/NA	Water	General Prep	
440-8694-2	Trip Blank	Total/NA	Water	General Prep	
S204070-03	Lab Control Sample	Total/NA	WATER	General Prep	
S204070-04	Method Blank	Total/NA	WATER	General Prep	
S204070-05	OUTFALL 002 (440-8694-1) DU	Total/NA	WATER	General Prep	

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Definitions/Glossary

Client: MWH Americas Inc

Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
AY	Matrix Interference suspected
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

HPLC/IC

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

DIOXIN

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

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

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

Subcontract

C	Qualifier	Qualifier Description
Ĺ	J	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

	,,,,,,,,
☼	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)

TestAmerica Irvine 5/20/2012

TestAmerica Job ID: 440-8624-1

Client: MWH Americas Inc

Project/Site: Routine Outfall 002 Grab

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	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	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.

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EBERLINE SERVICES

May 9, 2012

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

Reference: Test America-Irvine 44002624

Eberline Analytical Report S204070-8612

Sample Delivery Group 8612

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 17, 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 8612 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%

Eberline Analytical Report No. S204070-8612

Test America Project No. 44002624

Case Narrative, page 2

May 9, 2012

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."

Joseph Verville

Client Services Manager

5/9/12

Date

EBERLINE ANALYTICAL SDG 8612

SDG <u>8612</u>
Contact <u>Joseph Verville</u>

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

SUMMARY DATA SECTION

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Prepared by

Reviewed b**y**

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 05/09/12

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SDG <u>8612</u>

Contact Joseph Verville

REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

DUPLICATES

REPORT GUIDES

Page 1
SUMMARY DATA SECTION

Page 1

Lab id EASProtocol TAVersion Ver 1.0Form DVD-RGVersion 3.06Report date 05/09/12

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SDG 8612

SDG 8612

Contact Joseph Verville

GUIDE, cont. Client Test America, Inc.

Contract 44002624

THE DATA SUMMARY SECTION ABOUT

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

REPORT GUIDES Page 2 SUMMARY DATA SECTION Page 2

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-RG Version 3.06 Report date 05/09/12

EBERLINE ANALYTICAL

SDG 8612

SDG <u>8612</u>
Contact <u>Joseph Verville</u>

LAB SAMPLE SUMMARY

Client <u>Test America, Inc.</u>
Contract <u>44002624</u>

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	sas no	CHAIN OF CUSTODY	COLLECTED
S204070-01	OUTFALL 002 (440-8694-1)	Boeing-SSFL	WATER			440-4025.1	04/13/12 17:54
	TRIP-BLANK (440-8694-2)	Boeing-SSFL	WATER			440-4025.1	04/13/12 17:54
S204070-03	Lab Control Sample		WATER				
S204070-04	Method Blank		WATER				
S204070-05	Duplicate (S204070-01)	Boeing-SSFL	WATER				04/13/12 17:54

Lab id EAS

Protocol <u>TA</u>

Version <u>Ver 1.0</u>

Form DVD-LS

Version <u>3.06</u>
Report date <u>05/09/12</u>

LAB SUMMARY

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EBERLINE ANALYTICAL

SDG 8612

SDG <u>8612</u>
Contact <u>Joseph Verville</u>

QC SUMMARY

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

Contract 44002624

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS S		LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8612	440-4025.1	OUTFALL 002 (440-8694-1) TRIP-BLANK (440-8694-2)	WATER WATER		10.0 L 10.0 L		04/17/12 04/17/12	4	S204070-01 S204070-02	8612-001 8612-002
		Method Blank Lab Control Sample Duplicate (S204070-01)	WATER WATER WATER		10.0 L		04/17/12	4	S204070-04 S204070-03 S204070-05	8612-004 8612-003 8612-005

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>

Version Ver 1.0
Form DVD-QS

Version 3.06

Report date <u>05/09/12</u>

QC SUMMARY

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EBERLINE ANALYTICAL

SDG 8612

SDG <u>8612</u>
Contact <u>Joseph Verville</u>

PREP BATCH SUMMARY

Client Test America, Inc.
Contract 44002624

			PREPARATION	PREPARATION ERROR -			PLANCHETS ANALYZED					
TEST	MATRIX	METHOD	ВАТСН	2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	FIERS	
Beta	Counting											
AC	WATER	Radium-228 in Water	7271-144	10.4	2			1	1	1/1		
SR	WATER	Strontium-90 in Water	7271-144	10.4	2			1	1	1/1		
Gas F	roportion	al Counting										
80A	WATER	Gross Alpha in Water	7271-144	20.6	2	·		1	1	1/1		
80B	WATER	Gross Beta in Water	7271-144	11.0	2			1	1	1/1		
Gamma	Spectros	сору										
GAM	WATER	Gamma Emitters in Water	7271-144	7.0	2			1	1	1/1		
Kinet	ic Phosph	orimetry										
U_T	WATER	Uranium, Total	7271-144		2			1	1	1/1		
Liqui	id Scintil	lation Counting										
Н	WATER	Tritium in Water	7271-144	10.0	1			1	1	.1/1		
Rador	n Counting											
RA	WATER	Radium-226 in Water	7271-144	16.4	2			1	1	1/1		

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

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Lab id <u>EAS</u>

Protocol <u>TA</u>

Version <u>Ver 1.0</u>

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Version <u>3.06</u>

Report date <u>05/09/12</u>

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SDG 8612

SDG 8612
Contact Joseph Verville

LAB WORK SUMMARY

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

Contract 44002624

LAB SAMPLE COLLECTED	CLIENT SAMPLE ID	MATRIX			SUF-				
RECEIVED	CUSTODY SAS no		PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD
S204070-01	OUTFALL 002 (440-8694-	.)	8612-001	80A/80		05/01/12	05/03/12	BW	Gross Alpha in Water
04/13/12	Boeing-SSFL	WATER	8612-001	80B/80		05/01/12	05/03/12	BW	Gross Beta in Water
04/17/12	440-4025.1		8612-001	AC		04/30/12	05/01/12	BW	Radium-228 in Water
			8612-001	GAM		04/26/12	05/02/12	MWT	Gamma Emitters in Water
			8612-001	Н		04/19/12	04/24/12	BW	Tritium in Water
			8612-001	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8612-001	SR		04/26/12	05/01/12	BW	Strontium-90 in Water
			8612-001	U_T		04/27/12	04/27/12	TSC	Uranium, Total
S204070-02	TRIP-BLANK (440-8694-2)		8612-002	80A/80		04/30/12	05/03/12	BW	Gross Alpha in Water
04/13/12	Boeing-SSFL	WATER	8612-002	80B/80		04/30/12	05/03/12	BW	Gross Beta in Water
04/17/12	440-4025.1		8612-002	AC		04/30/12	05/01/12	BW	Radium-228 in Water
			8612-002	GAM		04/26/12	05/02/12	MWT	Gamma Emitters in Water
			8612-002	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8612-002	SR		04/26/12	05/01/12	BW	Strontium-90 in Water
			8612-002	U_T		04/27/12	04/27/12	TSC	Uranium, Total
S204070-03	Lab Control Sample		8612-003	80A/80		05/03/12	05/03/12	BW	Gross Alpha in Water
		WATER	8612-003	80B/80		05/03/12	05/03/12	BW	Gross Beta in Water
			8612-003	AC		04/30/12	05/01/12	BW	Radium-228 in Water
			8612-003	GAM		04/26/12	05/02/12	MWT	Gamma Emitters in Water
			8612-003	Н		04/19/12	04/24/12	BW	Tritium in Water
			8612-003	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8612-003	SR		04/26/12	05/01/12	BW	Strontium-90 in Water
			8612-003	U_T		04/27/12	04/27/12	TSC	Uranium, Total
S204070-04	Method Blank		8612-004	80A/80		04/30/12	05/03/12	BW	Gross Alpha in Water
		WATER	8612-004	80B/80		04/30/12	05/03/12	BW	Gross Beta in Water
			8612-004	AC		04/30/12	05/01/12	BW	Radium-228 in Water
			8612-004	GAM		04/27/12	05/02/12	MWT	Gamma Emitters in Water
			8612-004	Н		04/19/12	04/24/12	BW	Tritium in Water
			8612-004	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8612-004	SR		04/26/12	05/01/12	BW	Strontium-90 in Water
			8612-004	U_T		04/27/12	04/27/12	TSC	Uranium, Total

WORK SUMMARY

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Protocol <u>TA</u>

Version <u>Ver 1.0</u>

Form <u>DVD-LWS</u>

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SDG 8612
Contact Joseph Verville

WORK SUMMARY, cont.

Client <u>Test America, Inc.</u>
Contract <u>44002624</u>

LAB SAMPLE COLLECTED	CLIENT SAMPLE :	ID	MATRIX			SUF-				
RECEIVED	CUSTODY	SAS no		PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD
S204070-05	Duplicate (S20	4070-01)		8612-005	80A/80		04/30/12	05/03/12	BW	Gross Alpha in Water
04/13/12	Boeing-SSFL		WATER	8612-005	80B/80		04/30/12	05/03/12	BW	Gross Beta in Water
04/17/12				8612-005	AC		04/30/12	05/01/12	BW	Radium-228 in Water
				8612-005	GAM		04/27/12	05/02/12	MWT	Gamma Emitters in Water
				8612-005	Н		04/19/12	04/24/12	BW	Tritium in Water
				8612-005	RA		05/04/12	05/07/12	BW	Radium-226 in Water
				8612-005	SR		04/26/12	05/01/12	BW	Strontium-90 in Water
				8612-005	U_T		04/27/12	04/27/12	TSC	Uranium, Total

80A/80 Gross Alpha in Water 900.0 2 1 1 1 80B/80 Gross Beta in Water 900.0 2 1 1 1 AC Radium-228 in Water 904.0 2 1 1 1 GAM Gamma Emitters in Water 901.1 2 1 1 1 H Tritium in Water 906.0 1 1 1 1 RA Radium-226 in Water 903.1 2 1 1 1 SR Strontium-90 in Water 905.0 2 1 1 1	TEST	SAS no	COUNTS METHOD	OF TESTS REFERENCE	 E TYPE	BLANK	LCS	DUP SPIKE	LATOT
80B/80 Gross Beta in Water 900.0 2 1 1 1 AC Radium-228 in Water 904.0 2 1 1 1 GAM Gamma Emitters in Water 901.1 2 1 1 1 H Tritium in Water 906.0 1 1 1 1 RA Radium-226 in Water 903.1 2 1 1 1 SR Strontium-90 in Water 905.0 2 1 1 1					 	 		 	
AC Radium-228 in Water 904.0 2 1 1 1 1 GAM Gamma Emitters in Water 901.1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	80A/80		Gross Alpha in Water	900.0	2	1	1	1	5
GAM Gamma Emitters in Water 901.1 2 1 1 1 H Tritium in Water 906.0 1 1 1 1 1 RA Radium-226 in Water 903.1 2 1 1 1 1 SR Strontium-90 in Water 905.0 2 1 1 1 1	80B/80		Gross Beta in Water	900.0	2	1	1	1	5
H Tritium in Water 906.0 1 1 1 1 1 1 RA Radium-226 in Water 903.1 2 1 1 1 1 SR Strontium-90 in Water 905.0 2 1 1 1 1	AC		Radium-228 in Water	904.0	2	1	1	1	5
RA Radium-226 in Water 903.1 2 1 1 1 SR Strontium-90 in Water 905.0 2 1 1 1	GAM		Gamma Emitters in Water	901.1	2	1	1	1	5
SR Strontium-90 in Water 905.0 2 1 1 1	Н		Tritium in Water	906.0	1	1	1	1	4
	RA		Radium-226 in Water	903.1	2	1	1	1	5
The state of the s	SR		Strontium-90 in Water	905.0	2	1	1	1	5
U_T Uranium, Total D5174 2 1 1 1	U_T		Uranium, Total	D5174	2	1	1	1	5

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SDG 8612

8612-004

Method Blank

METHOD BLANK

SDG 8612 Client Test America, Inc.
Contact Joseph Verville Contract 44002624

Lab sample id S204070-04 Client sample id Method Blank
Dept sample id 8612-004 Material/Matrix MATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	-0.192	0.30	0.606	3.00	ŭ	A08
Gross Beta	12587472	0.051	0.52	0.863	4.00	U	80B
Tritium	10028178	60.0	92	152	500	U	H
Radium-226	13982633	0.182	0.34	0.593	1.00	U	RA
Radium-228	15262201	-0.122	0.15	0.413	1.00	U	AC
Strontium-90	10098972	0.067	0.22	0.478	2.00	U	SR
Uranium, Total		0	0.008	0.018	1.00	U	UТ
Potassium-40	13966002	1.73	18	_32.1	25.0	U	GAM
Cesium-137	10045973	-0.940	1.7	3.07	20.0	U	GAM

QC-BLANK #81586

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Protocol <u>TA</u>

Version <u>Ver 1.0</u>

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SDG 8612

8612-003

Lab Control Sample

WATER

LAB CONTROL SAMPLE

SDG 8612 Client Test America, Inc.

Contact Joseph Verville Contract 44002624

Lab sample id S204070-03

Dept sample id 8612-003

Material/Matrix

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)	PROTOCO LIMITS
Gross Alpha	40.4	4.2	1.66	3.00		80A	37.0	1.5	109	74-126	70-130
Gross Beta	32.6	2.5	2.14	4.00		80B	34.0	1.4	96	86-114	70-130
Tritium	2380	150	152	500	•	Н	2440	98	98	88-112	80-120
Radium-226	48.5	2.1	0.687	1.00		RA	50.1	2.0	97	83-117	80-120
Radium-228	4.73	0.45	0.385	1.00		AC	4.41	0.18	107	84-116	60-140
Strontium-90	7.84	0.41	0.174	2.00		SR	9.34	0.37	84	89-111	80-120
Uranium, Total	64.2	7.2	0.181	1.00		U_T	56.5	2.3	114	87-113	80-120
Cobalt-60	126	6.3	6.18	10.0		GAM	130	5.2	97	91-109	80-12
Cesium-137	149	7.1	9.26	20.0		GAM	147	5.9	101	91-109	80-12

QC-LCS #81585

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8612-005

OUTFALL 002 (440-8694-1)

DUPLICATE

SDG 8612
Contact Joseph Verville

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

Contract 44002624

DUPLICATE

ORIGINAL

Client sample id OUTFALL 002 (440-8694-1)

Lab sample id <u>S204070-05</u>

Dept sample id <u>8612-005</u>

Lab sample id <u>\$204070-01</u>

Dept sample id <u>8612-001</u>

Location/Matrix Boeing-SSFL

WATER

Received <u>04/17/12</u>

Collected/Volume <u>04/13/12 17:54</u> <u>10.0 L</u>

Chain of custody id 440-4025.1

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	2.68	0.94	0.940	3.00	J	80A	1.34	0.81	1.26	J	67	103	1.9
Gross Beta	5.29	0.87	1.15	4.00		80B	4.81	0.97	1.44		10	45	0.6
Tritium	18.5	91	152	500	υ	Н	19.4	88	148	Ū	-		0
Radium-226	0.080	0.33	0.589	1.00	U	RA	0.266	0.35	0.587	U	-		0.8
Radium-228	0.333	0.17	0.404	1.00	U	AC	0.295	0.15	0.382	U	-		0.3
Strontium-90	0.038	0.35	0.808	2.00	U	SR	-0.131	0.33	0.835	U	-		0.7
Uranium, Total	0.183	0.021	0.018	1.00	J	U_T	0.172	0.020	0.018	J	6	25	0.8
Potassium-40	3.82	19	34.2	25.0	Ū	GAM	-4.54	15	26.9	U	-		0.7
Cesium-137	-0.761	1.8	3.22	20.0	Ū	GAM	0.152	1.3	1.58	U	_		0.8

QC-DUP#1 81587

DUPLICATES

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8612-001

DATA SHEET

OUTFALL 002 (440-8694-1)

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	1.34	0.81	1.26	3.00	J	A08
Gross Beta	12587472	4.81	0.97	1.44	4.00		80B
Tritium	10028178	19.4	88	148	500	U	Н
Radium-226	13982633	0.266	0.35	0.587	1.00	U	RA
Radium-228	15262201	0.295	0.15	0.382	1.00	U	AC
Strontium-90	10098972	-0.131	0.33	0.835	2.00	U	SR
Uranium, Total		0.172	0.020	0.018	1.00	J	UΤ
Potassium-40	13966002	-4.54	15	26.9	25.0	U	GAM
Cesium-137	10045973	0.152	1.3	1.58	20.0	U	GAM

DATA SHEETS

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8612-002

TRIP-BLANK (440-8694-2)

DATA SHEET

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.007	0.15	0.283	3.00	U	80A
Gross Beta	12587472	-0.018	0.47	0.784	4.00	U	80B
Radium-226	13982633	-0.108	0.29	0.564	1.00	U	RA
Radium-228	15262201	-0.123	0.15	0.377	1.00	U	AC
Strontium-90	10098972	-0.012	0.34	0.814	2.00	U	SR
Uranium, Total		0	0.008	0.018	1.00	Ū	U_T
Potassium-40	13966002	1.16	20	35.5	25.0	Ū	GAM
Cesium-137	10045973	0.520	1.0	2.01	20.0	U	GAM

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Test <u>AC</u> Matrix <u>WATER</u>

SDG <u>8612</u>

Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY

RADIUM-228 IN WATER BETA COUNTING Client Test America, Inc.
Contract 44002624

RESULTS

LAB RAW SUF-SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Radium-228 Preparation batch 7271-144 S204070-01 8612-001 OUTFALL 002 (440-8694-1) U S204070-02 8612-002 TRIP-BLANK (440-8694-2) Lab Control Sample S204070-03 8612-003 ok S204070-04 8612-004 Method Blank Duplicate (S204070-01) S204070-05 8612-005 U Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB	RAW SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX CLIENT SAMPLE ID	pCi/L	L	FAC	TION	ક	왕	min	keV	KeV	HELLD	PREPARED	YZED	DETECTOR
Preparation	batch 7271-144 2σ prep error 10	.4 % Ref	erence	Lab N	otebool	c No.	7271	pg.012	2					
S204070-01	OUTFALL 002 (440-8694-1)	0.382	1.80			83		150			17	04/30/12	04/30	GRB-221
S204070-02	TRIP-BLANK (440-8694-2)	0.377	1.80			81		150			17	04/30/12	04/30	GRB-222
S204070-03	Lab Control Sample	0.385	1.80			78		150				04/30/12	04/30	GRB-223
S204070-04	Method Blank	0.413	1.80			81		150				04/30/12	04/30	GRB-224
S204070-05	Duplicate (S204070-01)	0.404	1.80			83		150			17	04/30/12	04/30	GRB-229
														
Nominal val	ues and limits from method	1.00	1.80			30-10	5	50			180			

PROCEDURES REFERENCE 904.0

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

AVERAGES ± 2 SD MDA 0.392 ± 0.031 FOR 5 SAMPLES YIELD 81 ± 4

METHOD SUMMARIES

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Test <u>SR</u> Matrix <u>WATER</u>
SDG <u>8612</u>

Contact Joseph Verville

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER
BETA COUNTING

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

Contract 44002624

RESULTS

AB RAW SUF-

SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Stronti	m-90
Preparation	batch 727	1-144			
S204070-01		8612-001	OUTFALL 002 (440-8694-1)	υ	
S204070-02		8612-002	TRIP-BLANK (440-8694-2)	U	
S204070-03		8612-003	Lab Control Sample	ok	
S204070-04		8612-004	Method Blank	U	
S204070-05		8612-005	Duplicate (S204070-01)	-	U

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	& AIETD	EFF %	COUNT min	FWHM keV	DRIFT KeV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7271-144 2σ prep	error 10.4 % Re	ference	Lab N	loteboo!	k No.	7271	pg.012	:					
S204070-01	OUTFALL 002 (440-	8694-1) 0.835	0.500			95		50			13	04/26/12	04/26	GRB-221
S204070-02	TRIP-BLANK (440-8	3694-2) 0.814	0.500			95		50			13	04/26/12	04/26	GRB-222
S204070-03	Lab Control Samp	e 0.174	1.00			93		120				04/26/12	04/26	GRB-222
S204070-04	Method Blank	0.478	1.00			88		50				04/26/12	04/26	GRB-224
S204070-05	Duplicate (S2040	70-01) 0.808	0.500			85		50			13	04/26/12	04/26	GRB-229
Nominal val	ues and limits from method	2.00	1.00			30-10	5	50			180			

PROCEDURES REFERENCE 905.0

CP-380 Strontium in Water Samples, rev 5

AVERAGES ± 2 SD MDA 0.622 ± 0.582 FOR 5 SAMPLES YIELD 91 ± 9

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SDG 8612

Test 80A Matrix WATER
SDG 8612

Contact Joseph Verville

LAB METHOD SUMMARY

GROSS ALPHA IN WATER
GAS PROPORTIONAL COUNTING

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

Contract 44002624

RESULTS

LAB SAMPLE ID	RAW SUF-	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
Preparation	batch 727	1-144			
S204070-01	80	8612-001	OUTFALL 002 (440-8694-1)	1.34 J	
\$204070-02	80	8612-002	TRIP-BLANK (440-8694-2)	U	
5204070-03	80	8612-003	Lab Control Sample	ok	
5204070-04	80	8612-004	Method Blank	U	
S204070-05	80	8612-005	Duplicate (S204070-01)	ok J	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF-	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC		RESID mg	EFF %	COUNT	FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727	1-144 2σ prep error 20).6 % Re	ference	Lab N	Iotebool	k No.	7271	pg.012	?				
S204070-01	80	OUTFALL 002 (440-8694-1)	1.26	0.220			92		400		18	04/26/12	05/01	GRB-214
S204070-02	80	TRIP-BLANK (440-8694-2)	0.283	0.300			0		400		17	04/26/12	04/30	GRB-109
S204070-03	80	Lab Control Sample	1.66	0.300			61		100			04/26/12	05/03	GRB-214
S204070-04	80	Method Blank	0.606	0.300			63		400			04/26/12	04/30	GRB-112
S204070-05	80	Duplicate (S204070-01)	0.940	0.220			93		400		17	04/26/12	04/30	GRB-109
Nominal val	ues and li	mits from method	3.00	0.300			0-25	0	100		 180			

PROCEDURES REFERENCE 900.0

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

AVERAGES ± 2 SD MDA 0.950 ± 1.08 FOR 5 SAMPLES RESIDUE 62 ± 76

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Test 80B Matrix WATER
SDG 8612

Contact Joseph Verville

LAB METHOD SUMMARY

GROSS BETA IN WATER
GAS PROPORTIONAL COUNTING

Client <u>Test America, Inc.</u>
Contract <u>44002624</u>

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RESULTS

AB RAW SUF-

SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Gross Beta Preparation batch 7271-144 S204070-01 80 8612-001 OUTFALL 002 (440-8694-1) 4.81 S204070-02 80 8612-002 TRIP-BLANK (440-8694-2) U S204070-03 80 8612-003 Lab Control Sample ok S204070-04 80 8612-004 Method Blank U S204070-05 80 8612-005 Duplicate (S204070-01) ok Nominal values and limits from method RDLs (pCi/L) 4.00

METHOD PERFORMANCE

LAB RAW SUF-MDA ALIQ PREP DILU- RESID EFF COUNT FWHM DRIFT DAYS ANALpCi/L % min keV KeV HELD PREPARED YZED SAMPLE ID TEST FIX CLIENT SAMPLE ID FAC TION mg DETECTOR 2σ prep error 11.0 % Reference Lab Notebook No. 7271 pg.012 Preparation batch 7271-144 OUTFALL 002 (440-8694-1) 1.44 <u>0.220</u> 18 04/26/12 05/01 GRB-214 S204070-01 80 92 400 S204070-02 80 TRIP-BLANK (440-8694-2) 0.784 0.300 0 400 17 04/26/12 04/30 GRB-109 S204070-03 80 Lab Control Sample 2.14 0.300 61 100 04/26/12 05/03 GRB-214 S204070-04 80 Method Blank 0.863 0.300 63 400 04/26/12 04/30 GRB-112 S204070-05 80 Duplicate (S204070-01) 1.15 0.220 93 400 17 04/26/12 04/30 GRB-109 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
 MDA
 1.28
 ±
 1.10

 FOR 5 SAMPLES
 RESIDUE
 62
 ±
 76

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Test GAM Matrix WATER

SDG 8612

Contact Joseph Verville

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER
GAMMA SPECTROSCOPY

Client Test America, Inc.
Contract 44002624

RESULTS

AB RAW SUF-

SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137	
Preparation	hatah 727	11 144		15 115 11 11 12 1		
Preparation	Daten /2/	1-144				
S204070-01		8612-001	OUTFALL 002 (440-8694-1)		U	
S204070-02		8612-002	TRIP-BLANK (440-8694-2)		U	
S204070-03		8612-003	Lab Control Sample	ok	ok	
S204070-04		8612-004	Method Blank		U	
S204070-05		8612-005	Duplicate (S204070-01)		- U	
Nominal val	ues and li	mits from π	ethod RDLs (pCi/L)	10.0	20.0	

METHOD PERFORMANCE

LAB	RAW SUF-			MDA	ALIQ	PREP	DILTA-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE	ID	pCi/L	L	FAC	TION	ક	왐	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation	batch 727	1-144 2σ p	rep error 7.	0 % R	eference	Lab 1	Notebool	No.	7271	pg.012	2					
S204070-01		OUTFALL 002 (440-8694-1)		2.00					400			13	04/26/12	04/26	MB,G8,0
S204070-02		TRIP-BLANK (4	40-8694-2)		2.00					400			13	04/26/12	04/26	MB,G1,0
S204070-03		Lab Control S	ample		2.00					400				04/26/12	04/26	MB,G6,0
S204070-04		Method Blank			2.00					400				04/26/12	04/27	MB,G3,0
S204070-05		Duplicate (S2	04070-01)		2.00					400			14	04/26/12	04/27	MB,G4,0
Nominal val	ues and li	mits from meth	od	6.00	2.00					400			180			

PROCEDURES REFERENCE 901.1

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

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Test <u>U T</u> Matrix <u>WATER</u>

SDG 8612

Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY

URANIUM, TOTAL
KINETIC PHOSPHORIMETRY

Client Test America, Inc.
Contract 44002624

RESULTS

LAB	RAW SUF-			Uranium,
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total
Preparation	batch 7271	144		
S204070-01		8612-001	OUTFALL 002 (440-8694-1)	0.172 J
S204070-02		8612-002	TRIP-BLANK (440-8694-2)	υ
S204070-03		8612-003	Lab Control Sample	ok
S204070-04		8612-004	Method Blank	υ
S204070-05		8612-005	Duplicate (S204070-01)	ok J
Nominal val	lues and lim	nits from m	nethod RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB	RAW SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	왕	ક	min	keV	КеV	HELD	PREPARED	YZED	DETECTOR
				5	1 v		- 37 -	2021	01						
Preparation	batch 727	1-144 2σ prep error	Re	eference	ьаю м	осевоо	K NO.	/2/1	pg.ur.	2					
S204070-01		OUTFALL 002 (440-8694-1)	0.018	0.0200								14	04/27/12	04/27	KPA-001
S204070-02		TRIP-BLANK (440-8694-2)	0.018	0.0200								14	04/27/12	04/27	KPA-001
S204070-03		Lab Control Sample	0.181	0.0200									04/27/12	04/27	KPA-001
S204070-04		Method Blank	0.018	0.0200									04/27/12	04/27	KPA-001
S204070-05		Duplicate (S204070-01)	0.018	0.0200								14	04/27/12	04/27	KPA-001
Nominal val	ues and li	mits from method	1.00	0.0200								180			

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD MDA 0.051 ± 0.146
FOR 5 SAMPLES YIELD ____ ± ______

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Test	<u>H</u>	Matrix	WATER
SDG	8612		
Contact	Josep	h Verv	ille

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Client <u>Test America, Inc.</u>
Contract <u>44002624</u>

RESULTS

AB RAW SUF-

SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Trit	ium	
Preparation	batch 727	1-144				
S204070-01		8612-001	OUTFALL 002 (440-8694-1)	U		
S204070-03		8612-003	Lab Control Sample	ok		
S204070-04		8612-004	Method Blank	U		
S204070-05		8612-005	Duplicate (S204070-01)	_	U	

METHOD PERFORMANCE

LAB	RAW SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX CLIENT SAM	MPLE ID p	Ci/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation	batch 7271-144	2σ prep error 10.0) % Ref	ference	Lah N	otebool	NO.	7271	pg. 012	,					
-		02 (440-8694-1) 14		0.0100	Date in	000000	100		150			<i>c</i>	04/19/12	04/19	LSC-007
S204070-01		- , ,										•		•	-
S204070-03	Lab Contro	ol Sample 15	52	0.100			10		150				04/19/12	04/19	LSC-007
S204070-04	Method Bla	ank 15	52	0.100			10		150				04/19/12	04/19	LSC-007
S204070-05	Duplicate	(S204070-01) 15	52 (0.0100			100		150			6	04/19/12	04/19	LSC-007
								-							
Nominal val	ues and limits from m	method 50	00 (0.0100					100			180			

PROCEDURES	REFERENCE	906.0
	D W P-212	Tritium in Drinking Water by Distillation, rev 8

AVERAGES ± 2 SD	MDA <u>151</u> ± <u>4.00</u>
FOR 4 SAMPLES	YIELD <u>55</u> ± <u>104</u>

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Test <u>RA</u> Matrix <u>WATER</u>
SDG 8612

Contact Joseph Verville

LAB METHOD SUMMARY

RADIUM-226 IN WATER RADON COUNTING

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

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RESULTS

AB RAW SUF-

SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Radium-	226
Preparation	batch 727	1-144			
S204070-01		8612-001	OUTFALL 002 (440-8694-1)	U	
S204070-02		8612-002	TRIP-BLANK (440-8694-2)	U	
S204070-03		8612-003	Lab Control Sample	ok	
S204070-04		8612-004	Method Blank	U	
S204070-05		8612-005	Duplicate (S204070-01)	-	U

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF-	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727	71-144 2σ prep error 16	6.4 % Re	ference	Lab 1	Notebool	k No.	7271	pg.012	2	 			
S204070-01		OUTFALL 002 (440-8694-1)	0.587	0.100			100		105		21	05/04/12	05/04	RN-012
\$204070-02		TRIP-BLANK (440-8694-2)	0.564	0.100			100		105		21	05/04/12	05/04	RN-013
S204070-03		Lab Control Sample	0.687	0.100			100		105			05/04/12	05/04	RN-009
S204070-04		Method Blank	0.593	0.100			100		80			05/04/12	05/04	RN-010
S204070-05		Duplicate (S204070-01)	0.589	0.100			100		105		21	05/04/12	05/04	RN-015
						,					 			
Nominal val	ues and li	mits from method	1.00	0.100					100		180			

PROCEDURES REFERENCE 903.1

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

AVERAGES ± 2 SD MDA 0.604 ± 0.096
FOR 5 SAMPLES YIELD 100 ± 0

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REPORT GUIDE

Client <u>Test America</u>, <u>Inc.</u> Contract <u>44002624</u>

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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Contact <u>Joseph Verville</u>

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Client <u>Test America, Inc.</u> Contract <u>44002624</u>

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

These qualifiers should be reviewed as follows:

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

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

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Client <u>Test America, Inc.</u> Contract <u>44002624</u>

WORK SUMMARY

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

The following notes apply to this report:

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

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REPORT GUIDE

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DATA SHEET

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

The following notes apply to this report:

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

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

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

The following qualifiers are defined by the DVD system:

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

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GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

DATA SHEET

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

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

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

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

- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

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

The following values are underlined to indicate possible problems:

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

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DATA SHEET

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

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

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Client <u>Test America, Inc.</u> Contract <u>44002624</u>

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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Lab id <u>EAS</u>
Protocol <u>TA</u>

Version <u>Ver 1.0</u>
Form <u>DVD-RG</u>

Version <u>3.06</u>

Report date <u>05/09/12</u>

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SDG 8612

SDG 8612
Contact Joseph Verville

REPORT GUIDE

Client <u>Test America</u>, <u>Inc.</u> Contract <u>44002624</u>

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

This value reported for this limit is at most 999.

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

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GUIDE, cont.

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DUPLICATE

- 2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.
- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

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

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

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Contact Joseph Verville

REPORT GUIDE

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MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 - 1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

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

- 2. The error of ADDED.
- 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.

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Lab id EASProtocol TAVersion Ver 1.0Form Ver 1.0Version Ver 1.0Version Ver 1.0Version Ver 1.0Report date Ver 1.0

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GUIDE, cont.

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MATRIX SPIKE

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

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

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Lab id <u>EAS</u>

Protocol <u>TA</u>

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Form <u>DVD-RG</u>

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REPORT GUIDE

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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Protocol <u>TA</u>

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METHOD SUMMARY

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

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

MDAs are underlined if greater than the printed RDL.

- * Aliquots are underlined if less than the nominal value specified for the method.
- * 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

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Lab id \underline{EAS} Protocol \underline{TA} Version $\underline{Ver 1.0}$ Form $\underline{DVD-RG}$ Version $\underline{3.06}$ Report date $\underline{05/09/12}$

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GUIDE, cont.

Client <u>Test America</u>, <u>Inc.</u> Contract <u>44002624</u>

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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METHOD SUMMARY

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

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

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

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

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TestAmerica THE LEADER IN ENVIRONMENTAL TESTING N - None
O - ANADO2
O - ANADO2
P - Na2O4S
Q - Na2SO3
R - Na2SSO3
S - HZSO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4-5
Z - other (specify) Company FREKLIN Special Instructions/Note: Months Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For Mont Company Preservation Codes 0:00 H - Ascorbic Acid A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor Page: Page 1 of 1 COC No: 440-4025.1 12.00 440-8694-1 |-|ce |J-Di Water |K-EDTA |L-EDA Total Number of containing Date/Time: 3204.070 Method of Shipment **Analysis Requested** Sooler Temperature(s) °C and Other Remarks Special Instructions/QC Requirements: × VET-SO UP- N Spec K-40 CS-137 **Chain of Custody Record** × × E-Mail: debby.wilson@testamericainc.com SUBCONTRACT/ Tritum × × × × eceived by × × Lab PM: Wilson, Debby SUBCONTRACT/ Gross Alpha × × Time: S=solid, O=wastefoll, Company Matrix (W-water, Water Water Company Company G=grab) Sample (C=comp, Type 00:00 17.54 Sample Pacific 17:54 Pacific Date: TAT Requested (days): Date/Time: Due Date Requested: 4/30/2012 Sample Date 4/13/12 4/13/12 Project #: 44002624 SSOW#: Date/Time: Sampler Phone: # OM Client Information (Sub Contract Lab) Deliverable Requested: I, II, III, IV, Other (specify) Custody Seals Intact: Custody Seal No. Phone (949) 261-1022 Fax (949) 260-3297 Sample Identification - Client ID (Lab ID) Possible Hazard Identification TestAmerica Irvine 17461 Derian Ave Suite 100 Empty Kit Relinquished by: Outfall 002 (440-8694-1) Irvine, CA 92614-5817 rip Blank (440-8694-2) 2030 Wright Avenue, Shipping/Receiving Routine Outfall 002 Eberline Services elinguished by: Relinquished by: Boeing SSFL elinquished by State, Zip: CA, 94804 Client Contact: roject Name: Richmond Phone mail:

DEB	ERLINE
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Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"

LABORATORY REPORT

Date:

April 21, 2012

Client:

TestAmerica, Irvine

17461 Derian Ave., Suite 100

Irvine, CA 92614 Attn: Debby Wilson



"dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107 Ventura, CA 93003

(805) 650-0546 FAX (805) 650-0756

CA DOHS ELAP Cert. No.: 1775

Laboratory No.:

A-12041402-001

Job No.:

440-8694-1

Sample I.D.:

Outfall 002 (440-8694-1)

Sample Control:

The sample was received by ATL chilled, within the recommended hold time and with the chain of custody record attached. Testing conducted on only one sample per client instruction (rain runoff sample). The temperature was acceptable as sample was received directly from field.

Date Sampled:

04/13/12

Date Received:

04/14/12 8.6°C

Temp. Received: Chlorine (TRC):

 $0.0 \, \text{mg/l}$

Date Tested:

04/14/12 to 04/20/12

Sample Analysis:

The following analyses were performed on your sample:

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

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

Result Summary:

Chronic:

 $\frac{\text{NOEC}}{100\%} \qquad \frac{\text{TUc}}{1.0}$

Ceriodaphnia Survival:

Ceriodaphnia Reproduction:

100%

1.0

Quality Control:

Reviewed and approved by:

Joseph A. LeMay

CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0



Lab No.: A-12041402-001

Date Tested: 04/14/12 to 04/20/12

Client/ID: TestAmerica - Outfall 002 (440-8694-1)

TEST SUMMARY

Test type: Daily static-renewal.

Species: Ceriodaphnia dubia.

Age: < 24 hrs; all released within 8 hrs.

Test vessel size: 30 ml.

Number of test organisms per vessel: 1.

Temperature: 25 +/- 1°C.

Dilution water: Mod. hard reconstituted (MHRW).

QA/QC Batch No.: RT-120403.

Endpoints: Survival and Reproduction.

Source: In-laboratory culture. Food: .1 ml YTC, algae per day.

Test solution volume: 15 ml. Number of replicates: 10.

Photoperiod: 16/8 hrs. light/dark cycle.

Test duration: 6 days.

Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	22.4
100% Sample	100%	26.3
Sample not statistically	significantly less than Co	ontrol for either endpoint.

CHRONIC TOXICITY

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

QA/QC TEST ACCEPTABILITY

Parameter	Result				
Control survival ≥80%	Pass (100% survival)				
≥15 young per surviving control female	Pass (22.4 young)				
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)				
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 11.1%)				
Statistically significantly different concentrations relative difference > 13%	Pass (no concentration significantly different)				
Concentration response relationship acceptable	Pass (no significant response at concentration tested)				

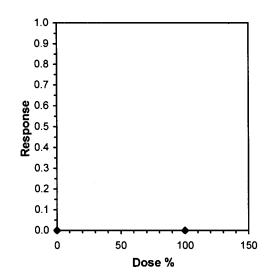
			Cerioda	aphnia Sur	vival and	Reprod	uction Tes	t-Surviv	al Day 6	
Start Date:	4/14/2012	15:00	Test ID:	12041402	C		Sample ID):	Outfall 002	2
End Date:	4/20/2012	14:30	Lab ID:	CAATL-Aq	juatic Tes	ting Labs	Sample Ty	уре:	SRW2-Ind	lustrial stormwater
Sample Date:	4/13/2012	17:54	Protocol:	FWCH-EP	A-821-R-	02-013	Test Spec	ies:	CD-Cerioo	laphnia dubia
Comments:										
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

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

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

Linear Interpolation (200 Resamples)

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



			Ceriod	aphnia Su	rvival an	d Reprod	uction Tes	st-Repro	duction	
Start Date:	4/14/2012	15:00	Test ID:	12041402	С		Sample ID):	Outfall 002	2
End Date:	4/20/2012	14:30	Lab ID:	CAATL-Ac	uatic Tes	sting Labs	Sample Ty	ype:	SRW2-Inc	dustrial stormwater
Sample Date:	4/13/2012	17:54	Protocol:	FWCH-EP	A-821-R	-02-013	Test Spec	ies:	CD-Cerioo	daphnia dubia
Comments:							·			·
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	15.000	24.000	24.000	16.000	24.000	23.000	25.000	27.000	22.000	24.000
100	28 000	26 000	28 000	25 000	27 000	26 000	30 000	27 000	25 000	21 000

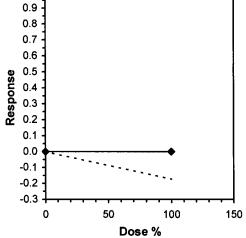
		_		Transform	n: Untran	sformed		Rank	1-Tailed	Isot	onic
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
D-Control	22.400	1.0000	22.400	15.000	27.000	17.252	10			24.350	1.0000
100	26.300	1.1741	26.300	21.000	30.000	9.148	10	141.00	82.00	24.350	1.0000

Statistic	Critical	Skew Kurt
0.8673	0.905	-1.1943 1.1059
2.57965	6.54109	
	0.8673	0.8673 0.905

Hypothesis Test (1-tail, 0.05)
Wilcoxon Two-Sample Test indicates no significant differences

Treatments vs D-Control

Linear Interpolation (200 Resamples)						
Point	%	SD	95% CL	Skew	• •	
IC05	>100					
IC10	>100					
IC15	>100				1.0	
IC20	>100				0.9 =	
IC25	>100				0.8 -	
IC40	>100				0.7	
IC50	>100				4	
					0.6 🖠	
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			Cerioda	iphnia Su	rvival and	l Reprodu	uction Tes	t-Reprod	luction		
Start Date:	4/14/2012	15:00	Test ID:	12041402	С		Sample ID	:	Outfall 002	2	
End Date:	4/20/2012	14:30	Lab ID:	CAATL-Ac	quatic Test	ting Labs	Sample Ty	rpe:	SRW2-Ind	lustrial stormwater	
O I . D	4/40/0040	47.54	D4I		A 004 D	00 040	Tool Coop		CD Corios	lanbaia dubia	
Sample Date:	4/13/2012	17:54	Protocol:	FWCH-EP	'A-821-K-(02-013	Test Spec	les.	CD-Celloc	laphnia dubia	
Sample Date: Comments:	4/13/2012	17:54	Protocoi:	FWCH-EP	'A-821-K-(02-013	rest Spec	les.	CD-Ceriod	apririla dubia	
•	1	2	3	4 4	7A-821-R-0 5	6	7	8 8	9	10	
Comments:	11	2 24.000	3 24.000	4 16.000	7A-821-R-0 5 24.000	6 23.000	7 25.000	8 27.000	9 22.000	•	

		_	•	Transform	n: Untran	sformed			1-Tailed		
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	Ň	t-Stat	Critical	MSD	
D-Control	22.400	1.0000	22.400	15.000	27.000	17.252	10				
100	26.300	1.1741	26.300	21.000	30.000	9.148	10	-2.709	1.730	2.490	

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates non	-normal di	stribution (p <= 0.05)		0.8673		0.905		-1.1943	1.10599
F-Test indicates equal variances	(p = 0.17)				2.57965		6.54109			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100		1	2.49037	0.11118	76.05	10.3611	0.01437	1, 18
Treatments vs D-Control										

CERIODAPHNIA DUBIA CHRONIC BIOASSAY EPA METHOD 1002.0 Raw Data Sheet



Lab No.: A-12041402-001 Start Date: 04/14/2012

Client ID: T	estAmeri	ca - Ou	tfall 00	2								Start	Date: 04	1/14/20)12
		DA			Y 2	I	DAY 3	D	AY 4	DA	Y 5	DA	AY 6	D	DAY 7
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst In	itials:	1	N	1	M	1	12	12	m	1/	1	2	1		
Time of Re	adings:	1500	1500	1500	1500	150	0 1430	1470	1500	BN	1470	1430	1430		
	DO	8.4	8.3	8.4	7.7	7.0	7 78	8.0	28	8.2	7.4	8.9	8.1		
Control	pН	8.1	8.1	8.1	8.1	8.	18.1	8.1	8-0	8-1	82/	8.1	8.7		
	Temp	24. >	24.1	24.3	24.2	24	5 24.1	24.3	243	24.2	24.7	24.7	24.9		
	DO	9.2	8.7	9.3	8.1	9.5	5 8.1	9.7	78	9.8	21	9.8	7.4		
100%	рН	7.8	8.1	7.9	8.0	7-8	3 8-0	76	8.0	7.7	8:0	7.8	8.1		
	Temp	24.3	24.3	24.7	24.2	24,	74 24	3 24.3	243	24.6	24.3		25.0		<u> </u>
	Ad	lditional	Paramete	ers					ontrol				100% San	nple	
	Со	nductivity	(umohm:	s)				77 <i>6</i>	,				225		
	Al	kalinity (n	ng/l CaCC	O ₃)					8				8		
	Ha	ardness (n	ng/I CaCC) ₃)					9				<u>/></u>		
	Ar	nmonia (r	ng/l NH3-	N)				40	9. [0.	5		
							Source of	Neonates							
Rep	olicate:		Α	В			D	Е	F		G	H	I		J
Bro	od ID:		A	JA.	2/	2	<i>>/</i> >	16	30	- 11	·	36	21+	1	X
Sample	2	Day				Numb		ng Produce	ed		Щ т	otal Live Young	No. Liv Adult		Analyst Initials
				A B	C	D	E	F G	H	I	J			_ _	77
		1		20	0	9		00	10		4	0	10	_	
:	-	2	C		0	9		00	10	00	4	12	10	-	a
		4		() () () ()		4	$\overline{}$	-1 3	10	4		29	10	,	1
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-		6		0 12		12		2/	1/12	101	3	116	10		
		7		_	,-										
		Total		15 20	124	16	24	232	527	22	<u> </u>	224			
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		3	_	3 4	C	4	0	5 (70	1	4	14	10	<u>_</u>	/
100%		4		00	کے ا	4	5		5 4	U	쒸	92	11	/ -	
	-	5		0/10	19	9	9	9/1	0 10	12	. #	128	1.0		th
		6	$-\parallel$	5/17	-14	12	13		1/2	10	10	160	10	$-\parallel$	<u>/ //</u>
		7 Total		8 2	(0) 2 0	121	177	2/12	12'		_	263	10		A
L .		Total		-V 1	<u> </u>		<u> </u>			<u>ול ז<i>ו</i>י</u>	اللم	<u>, , , , , , , , , , , , , , , , , , , </u>	<u> </u>		

Circled fourth brood not used in statistical analysis.

7th day only used if <60% of the surviving control females have produced their third brood. Page 90 of 109



CHAIN OF CUSTODY

CHAIN OF CUSTODY FORM

Comp_2 of 3

₹ X	NPDES Level IV:		ments: (Check)	urireme	Data Requirements: (Check)							,	0							`	4		
	!		y: (Check) On ice: _	ntegrity:	Sample Integrity: (Check)	ya	_	1-12	7		Date/lime:	- A			Received by		2		Date/Time:		Mus	Relinquished By	Res Res
יץ	Normal:	\ \ 8	_ 5 Day: _	1	48 Hour:				× .	1		1	1				2	12.55)	100	R
	10 Day:		72 Hour	7	24 Hour		`	12	, <u>,</u> , ,	<u>.</u> (7000		a		,	Î		- ''	מומי	c	7	Remitquired by	No.
		٦	Check	und time	the same event. Turn-around time: (Check)	02 for	fall 0	Jy Or	of 3 fa	age 1	OC Page	der for C	orkor	same w	d to the	These must be added to the same work order for COC Page 1 of 3 for Outfall 002 for the same event.	These must be a	The	of of time			aniahod By	0
			וּה	n eve	stori	or the	002	uttall	s for C	Imples	site sa	compos	are the	e 3 of, 3 a	nd Page	COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 002 for this storm event.	OC Page	S					
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	<u> </u>	-	_	<u> </u>	_					×	\vdash				19	NaOH	24/2	<i>1</i> -/3		500 mL Poly	\$	Outfall 002	
Only test if first or second rain events of the year		-									×				18	None	7	و	1	1 Gal Cube	€	Outfall 002	
didiysis	-	_	_	ļ					-			:		_	17B	None			1	500 mL Amber	_	000	(
Unfiltered and unpreserved												×			17A	None				2.5 Gal Cube	≨	Outfall 002	ا ر
Filter w/in 24hrs of receipt at lab		╁	<u> </u>	ļ						ļ	_			×	16	None	1,00	4-13-2017	1	1L Poly	٤	Outfall 002	٥
	ļ	-	<u> </u>							Cyar	Chro	Com Radi	Gros		e Bottle#	Preservative	pling Time	Sampling Date/Time	# of Cont.	Container Type	Sample Matrix	Sample Description	D
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												ım 2 (4.0)		Meta			Phone Number:	hone		Bronwyn Kelly	r: Bronv	Project Manager:	Pro
Comments									<u></u>		,	i, Sr-90 (905.0 26 (903.0 or 9 i, Uranium (90 r 901.1)	Gross Beta(9	als: Cu, Pb, H) ————	Debby Wils	ontact: I	Test America Contact: Debby Wilson	Tesi
					·····							903.1) &		g, Cd, Se		1002	Routine Outfall 002 COMPOSITE	Routine Outf	<u> </u>	te 200	Ave, Sui	618 Michillinda Ave, Suite 200 Arcadia, CA 91007	618 Arca
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		uireme	Special instructions/QC Req				Deliversbis Requested: I, II, III, IV, Other (specify)
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iodee:	Preservation Codes:					Dite Date Requested: 4/30/2012	4350 Transport #107,
	9C 440-8694-1	Analysis Requested					Aquatic Tasling Laboratories
L1* 85F	Page 1 of 1	ainc.com	E-Mail: debby.wilson@testamericainc.com	E-Mai: debby:		Phone:	Shipping/Receiving
	Center Tracting Notes: OOC No: 440-4008,1	Сийи	Lab PM: Wilson, Debby	Lab PM: VViison		Sampler:	Client Information (Sub Contract Lab)
His Leader in Environmental Testing	HI TENDER IN						Phone (949) 281-1022 Fax (949) 280-3297
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Ceriodaphnia dubia Chronic Toxicity Test Reference Toxicant Data

CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0 REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-120403

Date Tested: 04/03/12 to 04/09/12

TEST SUMMARY

Test type: Daily static-renewal. Species: *Ceriodaphnia dubia*.

Age: <24 hrs; all released within 8 hrs.

Test vessel size: 30 ml.

Number of test organisms per vessel: 1.

Temperature: 25 +/- 1°C.

Dilution water: Mod. hard reconstituted (MHRW).

Reference Toxicant: Sodium chloride (NaCl).

Endpoints: Survival and Reproduction.

Source: In-laboratory culture. Food: .1 ml YTC, algae per day. Test solution volume: 20 ml.

Number of replicates: 10.

Photoperiod: 16/8 hrs. light/dark cycle.

Test duration: 6 days.

Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survi	val	Mean Numb Young Per F	
Control	100%		23.5	į
0.25 g/l	100%		24.3	
0.5 g/l	100%		21.4	
1.0 g/l	100%		16.0	*
2.0 g/l	60%	*	1.4	**
4.0 g/l	0%	*	0	**

^{*} Statistically significantly less than control at P = 0.05 level

** Reproduction data from concentrations greater than survival NOEC are

excluded from statistical analysis.

CHRONIC TOXICITY

Survival LC50	2.1 g/l
Reproduction IC25	0.82 mg/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (23.5 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 16.2%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 31.9%)
Concentration response relationship acceptable	Pass (Response curve normal)

			Cerioda	aphnia Sur	vival and	Reprod	uction Tes	t-Surviv	al Day 6	
Start Date:	4/3/2012	14:00	Test ID:	RT120403	С		Sample ID	:	REF-Ref T	oxicant
End Date:	4/9/2012	14:00	Lab ID:	CAATL-Aq	uatic Tes	ting Labs	Sample Ty	rpe:	NACL-Soc	lium chloride
Sample Date:	4/3/2012		Protocol:	FWCH-EP	A-821-R-	02-013	Test Speci	ies:	CD-Ceriod	laphnia dubia
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

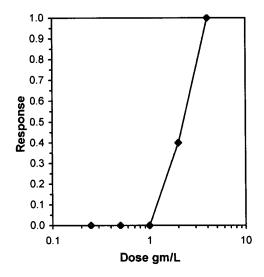
	***			Not			Fisher's	1-Tailed	Number	Total
Conc-gm/L	Mean	N-Mean	Resp	Resp	Total	N	Exact P	Critical	Resp	Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
*2	0.6000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

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

Treatments vs D-Control

Trimmed Spearman-Karber

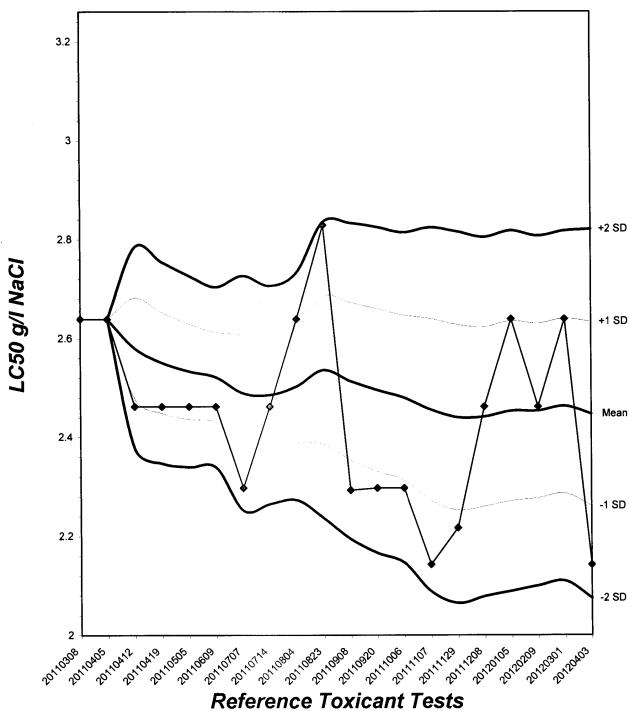
				,
Trim Level	EC50	95%	CL	
0.0%	2.1435	1.7293	2.6571	
5.0%	2.1584	1.6984	2.7429	
10.0%	2.1732	1.6538	2.8556	
20.0%	2.2021	1.5017	3.2291	
Auto-0.0%	2.1435	1.7293	2.6571	



5/20/2012

Ceriodaphnia Chronic Survival **Laboratory Control Chart**

CV% = 7.61



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			Ceriod	aphnia Sui	rvival and	l Reprodi	uction Tes	t-Repro			
Start Date:	4/3/2012	14:00	Test ID:	RT120403	c		Sample ID	:	REF-Ref T	oxicant	
End Date:	4/9/2012	14:00	Lab ID:	CAATL-Ac	uatic Tes	ting Labs	Sample Ty	/pe:	NACL-Soc	lium chloride	
Sample Date:	4/3/2012		Protocol:	FWCH-EP	A-821-R-	02-013	Test Spec	ies:	CD-Cerioo	laphnia dubia	
Comments:											
Conc-gm/L	1	2	3	4	5	6	7	8	9	10	
D-Control	20.000	17.000	25.000	25.000	24.000	27.000	28.000	27.000	20.000	22.000	
0.25	21.000	17.000	29.000	26.00 0	27.000	25.000	25.000	27.000	23.000	23.000	
0.5	16.000	14.000	23.000	22.000	24.0 0 0	23.000	23.000	23.000	23.000	23.000	
1	15.000	17.000	8.000	20.00 0	23.000	15.000	12.000	22.000	9.000	19.000	
2	0.000	0.000	0.000	2.000	4.000	3.000	0.000	0.000	0.000	5.000	
4	0.000	0.000	0.000	0.000	0.0 00	0.000	0.000	0.000	0.000	0.000	

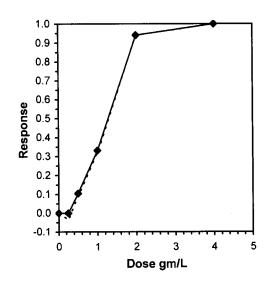
				Transforn	n: Untran	sformed		Rank	1-Tailed	Isoto	onic
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean_
D-Control	23.500	1.0000	23.500	17.000	28.00 0	15.441	10			23.900	1.0000
0.25	24.300	1.0340	24.300	17.000	29.0 00	14.262	10	111.50	77.00	23.900	1.0000
0.5	21.400	0.9106	21.400	14.00 0	24.000	16.067	10	87.00	77.00	21.400	0.8954
*1	16.000	0.6809	16.000	8.000	23.000	32.409	10	66.00	77.00	16.000	0.6695
2	1.400	0.0596	1.400	0.000	5.000	139.646	10			1.400	0.0586
4	0.000	0.0000	0.000	0.000	0.000	0.000	10			0.000	0.0000

Auxiliary Tests					Statistic	Critical	Skew	Kurt		
Shapiro-Wilk's Test indicates nor	n-normal dis	stribution		0.93053	0.94	-0.5964	-0.342			
Bartlett's Test indicates equal var			. ,		2.22089	11.3449	11.3449			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU						
Steel's Many-One Rank Test	0.5	1	0.70711							

Treatments vs D-Control

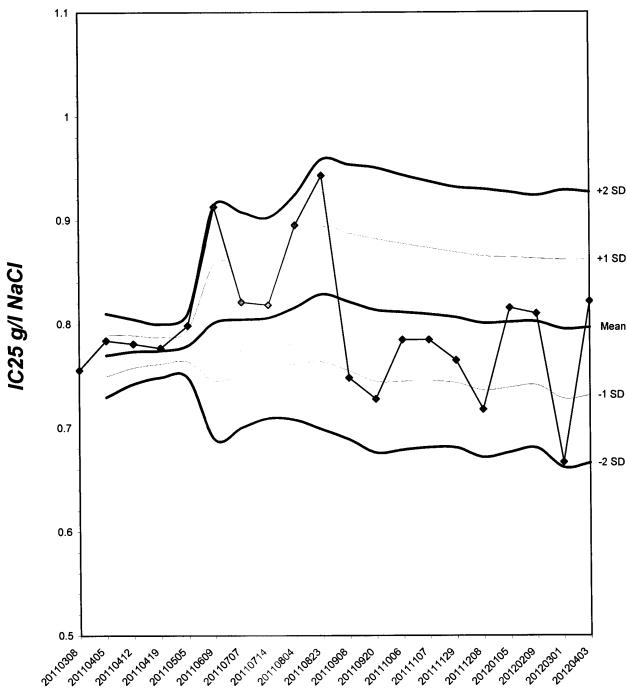
Linear I	nterpolation	(200 Resamp	ıles)
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Point	gm/L	SD	95%	CL	Skew
IC05	0.3695	0.0911	0.1696	0.568 6	0.2464
IC10	0.4890	0.0910	0.3077	0.6622	0.1815
IC15	0.6005	0.1009	0.4034	0.7714	0.1407
IC20	0.7111	0.1157	0.4592	0.957 9	0.18 0 7
IC25	0.8218	0.1195	0.5745	1. 053 6	0.0455
IC40	1.1137	0.1010	0.8928	1.260 9	-0.5191
IC50	1.2774	0.0905	1.0680	1.4019	-0.8577



Ceriodaphnia Chronic Reproduction Laboratory Control Chart





Reference Toxicant Tests

1	

			Ceriod	aphnia Su	rvival and	Reprod	uction Tes	t-Repro	duction	
Start Date:	4/3/2012	14:00	Test ID:	RT120403	С		Sample ID	:	REF-Ref 1	oxicant
End Date:	4/9/2012	14:00	Lab ID:	CAATL-Ac	juatic Tes	ling Labs	Sample Ty	rpe:	NACL-Soc	lium chloride
Sample Date:	4/3/2012		Protocol:	FWCH-EP	A-821-R-0	02-013	Test Spec	ies:	CD-Cerioo	laphnia dubia
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	17.000	25.000	25.000	24.000	27.000	28.000	27.000	20.000	22.000
0.25	21.000	17.000	29.000	26.000	27.000	25.000	25.000	27.000	23.000	23.000
0.5	16.000	14.000	23.000	22.000	24.000	23.000	23.000	23.000	23.000	23.000
1	15.000	17.000	8.000	20.000	23.000	15.000	12.000	22.000	9.000	19.000
2	0.000	0.000	0.000	2.000	4.000	3.000	0.000	0.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

				Transforn	n: Untran	sformed		1-Tailed		
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
D-Control	23.500	1.0000	23.500	17.000	28.000	15.441	10			-
0.25	24.300	1.0340	24.300	17.000	29.000	14.262	10	-0.448	2.137	3.819
0.5	21.400	0.9106	21.400	14.000	24.000	16.067	10	1.175	2.137	3.819
*1	16.000	0.6809	16.000	8.000	23.000	32.409	10	4.196	2.137	3.819
2	1.400	0.0596	1.400	0.000	5.000	139.646	10			
4	0.000	0.0000	0.000	0.000	0.000	0.000	10			

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates non	-normal dis	stribution	$(p \le 0.05)$		0.93053		0.94		-0.5964	-0.342
Bartlett's Test indicates equal var					2.22089		11.3449			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	0.5	1	0.70711		3.81887	0.1625	139.8	15.9722	1.7E-04	3, 36
Treatments vs D-Control										

Aquatic Testing Laboratories

CERIODAPHNIA DUBIA CHRONIC BIOASSAY

Reference Toxicant - NaCl Reproduction and Survival Raw Data Sheet

QA/QC No.: RT-120403

Start Date: 04/03/2012

	120105												. t Date.04/	
Sample	Day	A	В	Nu C	mber D	of Yo	oung F	Produ G	iced H	I	J	Total Live Young	No. Live Adults	Analyst Initials
	1	0	0	0	0	0	0	\mathcal{O}	0	0	C	0	10	n
	2	0	0	0	0	0	0	0	0	0	0	0	10	M
	3	U	Ò	C	<u></u>	3		74	3	J	0	10	10	a
	4	3	5	4	4	0	4	U	0	3	4	27	10	n
Control	5	O	0	10	8	8	9	9	10	\cap	8	69	10	h
	6	17	12	11	13	۱3	14	کا	14	10	10	129	10	10
	7	_	1	_		_	(1	1	1	_		_	
	Total	20	17	25	25	24	27	28	27	20	22	235	10	1
	1	0	0	0	0	0	0	0	0	0	0	0	10	n
	2	0	0	0	0	0	0	0	0	0	0	0	10	m
	3	0	0	0	0	4	C	4		c	0	8	10	1
0.25 ~/1	4	5	4	5	5	0	4	0	5	4	4	36	10	1
0.25 g/l	5	0	0	10	9	IV	9	7	9	9	8	71	10	h
	6	16	13	14	12	13	12	14	7	10	11	128	10	p
	7	_		_				((1	1	_	_	_
	Total	21	17	29	26	27	25	25	رلا	23	23	243	10	gh
	1	0	0	0	C	0	0	0	0	0	0	\circ	10	M
	2	0	0	0	0	0	0	0	0	\subset	\subset	\circ	10	h
	3	0	0	0	0	0	C	4	0	0	0	<u> </u>	10	M
0.5 g/l	4	4	4	3	3	5	4	Ò	3	4	4	34	10	
0.5 g/1	5	0	0	7	9	8	7	9	7	7	8	62	10	M
	6	12	-10	13	10	11	12	.10	13	12	11	114	IU	1/
	7		_	_		_	_			_	_			
	Total	مال	14	23	22	24	63	23	23	23	23	214	10	

Circled fourth brood not used in statistical analysis.

^{7&}lt;sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.

Aquatic Testing Laboratories

CERIODAPHNIA DUBIA CHRONIC BIOASSAY

Reference Toxicant - NaCl Reproduction and Survival Raw Data Sheet

QA/QC No.: RT-120403

Start Date: 04/03/2012

G1-	D		·	Nu	mbe	r of Y	oung]	Produ	ced			Total Live	No. Live	Analyst
Sample	Day	A	В	C	D	E	F	G	Н	I	J	Young	Adults	Initials
	1	0	0	0	0	0	0	0	0	C	0	\overline{c}	10	h
	2	0	0	0	0	0	0	0	0	0	0	C	10	12
	3	0	0	0	0	3	0	0	0	0	0	3	10	h
1.0 ~/1	4	3	4	2	3	0	3	4	니	2	3	28	10	1
1.0 g/l	5	0	0	0	7	7	U	8	7	7	6	4°\$1	40	h
	6	12	13	6	10	13	12	0	11	0	10	87	10	2
	7		_		_			_		_	_	_		
	Total	15	17	8	20	23	15	12	22	9	19	160	lU	2
	1	\circ	0	0	0	0	<u>C</u>	C	C	C	0	0	10	R
	2	X	X	0	C	0	0	X	X	0	0	0	4	R
	3	_	_	0	C	C	0			0	\bigcirc	0	6	
2.0 ~/1	4		_	0	0	C	C		_	0	0	C	6	1/2
2.0 g/l	5		_	0	2	2	3	_		0	2	9	6	1/2
	6		_	0	0	2	0	_	_	0	3	5	6	
	7		_	_	_	_	_	_	_	_	_			
	Total	0	0	0	2	١	3	0	0	U	5	14	6	/2
	1	<u> </u>	人	X	入	X	×	<u>></u>	<i>></i>	X	X	0	0	Jr
	2		_	_	_	_	_	_	_	_				/_
	3	_		_	_	_	_	_	_	_			_	
4.0 - 11	4		_	_		-	_	_	_	_		_		
4.0 g/l	5		_	_	_	_	_	_	_					
	6	_			_	_	_	_	_					
	7					_	_	_	_					
	Total	0	0	0	0	C	· C	0	0	C	0	6	0	n

Circled fourth brood not used in statistical analysis.

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

Aquatic Testing Laboratories

CERIODAPHNIA DUBIA CHRONIC BIOASSAY

Reference Toxicant - NaCl Water Chemistries Raw Data Sheet

QA/QC No.: RT-120403

Start Date: 04/03/2012

$\begin{array}{c c c c c c c c c c c c c c c c c c c $	((
Analyst Initials:			DA	Y 1	D/	AY 2	DA	Y 3	DA	Y 4	DA	Y 5	DA	Y 6	DA	Y 7
Time of Readings: 1400 14 14 14 14 14 14 14 14 14 14 14 14 14			Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	· II
Control PH Solvery Solvery PH	Analyst I	nitials:	J	1	1	1	1	7	7	9	1	1	7	<i>[</i>	p	n
Control pH 8.0 8.2 8.1 8.1 8.1 8.2 8.1 8.2 8.1 8.0 8.1 8.0 Temp 24.7 24.7 24.3 24.8 8.2 8.1 8.2 8.1 8.0 8.1 8.0 pH 8.0 8.2 8.1 8.1 8.2 8.1 8.2 8.1 8.0 8.1 8.0 pH 8.0 8.1 8.2 8.2 8.2 8.3 8.2 8.3 7.4 8.6 8.3 9.2 pH 8.0 8.1 8.2 8.2 8.2 8.3 8.1 8.2 8.1 8.0 8.1 8.0 Temp 24.5 24.7 24.5 24.5 24.5 24.5 24.5 24.5 24.5 24.5	Time of R	eadings:	1400	1400	1400	1400	1400	140	1400	1400	140	1400	1400	1/kg		_
Temp 247 247 243 243 246 247 248 247 248 244 243 245 — — — — — — — — — — — — — — — — — — —		DO	8.3	8,2	29	8.6	7.8	4.5	7. 9	8.4	.8.5	8,7	8.3	8-6	_	
DO 8.4 8.4 8.2 8.6 8.4 8.3 8.3 7.4 8.6 8.3 9.7 — Temp 24.5 24.7 24.5 24.5 24.7 24.8 24.6 24.7 24.8 24.4 24.5 24.6 — DO 9.2 8.3 8.1 8.2 8.1 8.6 8.9 8.4 8.3 8.1 8.0 8.1 8.0 — Temp 24.5 24.7 24.5 24.5 24.3 24.8 24.9 24.8 24.4 24.5 24.0 — DO 9.2 8.3 8.1 8.2 8.1 8.3 8.1 8.1 8.1 8.1 8.0 8.1 8.0 — Temp 24.5 24.7 24.8 24.3 24.8 24.3 24.8 24.3 24.7 25.2 — DO 8.2 8.3 8.1 8.9 8.3 8.5 7.4 8.1 8.0 8.9 8.9 8.3 8.1 — DO 8.2 8.3 8.1 8.9 8.3 8.5 7.4 8.1 8.1 8.1 8.1 8.1 8.1 8.1 8.1 8.1 8.1	Control	pН	8-0	8,2	8.1	8,1	8.2	8.2	8.1	8.2	8.1	810	8-1	80		_
0.25 g/l pH		Temp	24.7	24.7	243	243	24.6	24.7	24.8	24.7	24.8	24.4	ય્ય. રુ	24.5		
Temp 24.5 24.7 24.5 24.5 24.8 24.6 24.7 24.8 24.4 24.5 24.6 ————————————————————————————————————		DO	8.4	8.4	8,2	E:6	8,4	8,3	8->	8.3	7.4	×.6	8.3	9.7	1	_
DO	0.25 g/l	pН	8.0	8, (8.2	812	8.2	8.2	8,1	8, 2	8.1	8.0	8.1	80	_	_
0.5 g/l pH 8.0 8.1 8.2 8.1 8.3 8.2 8.1 8.1 8.1 8.0 8.1 8.0 7 7 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		Temp	24.5	<u>२५.</u> ७	24.5	ટ4. ક	24. 7	24.8	ટપ. 6	24.7	24.8	24.4	૮५.૬	246		
Temp 24,1 24,9 24,5 24,2 24,3 24,8 24,3 24,8 24,3 24,7 25,2 —— DO 8.2 8.3 8.1 8.4 8.3 8.5 7.9 8.1 8.0 8.4 8.3 8.1 ———————————————————————————————————		DO	8.2	8,3	8.1	8,6	8,2	8,6	81.0	8.4	8.1	8.6	8.4	8-0		
DO	0.5 g/l	pН	8.0	8.1	8,2	8,1	8,3	8.2	8:1	8.1	8.1	8.0	8.1	8-0		•
DO 8.2 8.3 8.1 8.4 8.3 8.5 7.9 8.1 8.0 8.4 8.3 8.1 ———————————————————————————————————		Temp	24.1	24.9	145	24.2	ટ4. 3	24.8	24. >	ટપ,8	24.8	24.3	24.7	25.2		
Temp 24.7 24.7 24.5 24.5 24.7 24.7 24.6 24.8 24.3 24.5 24.5 24.5 2.0 g/l DO 8.4 8.1 7.9 8.2 8.1 8.3 7.9 8.2 8.1 8.3 8.1 8.2 5.0 8.1 8.1 8.0 8.1 8.0 8.0 8.0 8.0 8.0 8.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5		DO	8.2	8.3	8.1	8.4	8.3	8.5	7. 9	8.1	810	8,4	8. 3	8.1		
DO 8.4 8.1 7.9 8.2 8.1 8.3 7.9 8.2 8.1 8.3 8.1 8.2 5 5 5 6 7 9 8.2 8.1 8.2 5 6 7 9 8.2 8.1 8.2 6 7 9 8.2 8.1 8.2 6 8.1 8.2 6 8.1 8.1 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0	1.0 g/l	pН	8.0	8,2	8,2	8,2	8,2	81	8.1	8.1	8:1	8.1	8.1	8.0	_	1
2.0 g/l pH 8.0 8.1 8.2 8.1 8.2 4.1 8.0 8.1 8.0 8.0 8.0 8.0 8.0 5.0 —— Temp 24.7 75.2 74.5 74.5 74.5 74.7 74.8 74.8 74.8 74.6 74.6 74.6 74.6 74.6 74.6 74.6 74.6		Temp	24.7	247	24.5	242	24.5	24.7	24.7	246	24.8	24.7	24.5	24.5		(
Temp 24.7 75.2 24.5 24.5 24.3 24.5 24.7 24.8 24.8 24.3 24.6 24.6 24.6 24.6 24.6 24.6 24.6 24.6		DO	8.4	8.2	7.9	8,2	8:1	8.3	7.9	8.2	8,1	8.3	8-1	8-2		
DO 8:5 8.1	2.0 g/l	pН	8.0	8.1	8.2	8.1	8,2	4.1	810	8.1	8.1	8.0	8.0	8.0	_	1
4.0 g/l pH 80 8.1		Temp	24.7	25,2	૮५ ૬	24,5	<i>ેપ.</i> 3	24.5	24.7	24.8	24.8	243	24.6	24.6	_	
4.0 g/1 pH 80 8, 1		DO	8.5	8.1	-	-	_	-		_	~	_	_	`	-	/
Temp 24.7 24.5	4.0 g/l	pН	80	8.1	-	-	-	_	_	_	_	_	-	_	_	
		Temp	24.7	24.5	_	-					_				_	

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

		Control		Н	igh Concentratio	n
Additional Parameters	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (μS)	309	319	316	6960	2520	3310
Alkalinity (mg/l CaCO ₃)	65	67	67	68	68	68
Hardness (mg/l CaCO ₃)	90	87	88	g O	89	88

Source of Neonates

Replicate:	A	В	С	D	Е	F	G	Н	I]#J
Brood ID:	IB	20	36	スカ	1B	3E	11=	19	3 <i>H</i>	3I

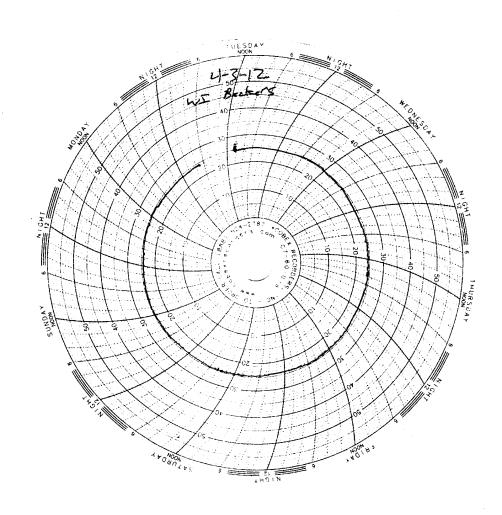


Test Temperature Chart

Test No: RT-120403

Date Tested: 04/03/12 to 04/09/06

Acceptable Range: 25+/- 1°C



CHAIN OF CUSTODY FORM

Test America version 7/19/2010

40-86 2 Capports

Client Name/Address:	dress:			Project:								ANALY:	ANALYSIS REQUIRED	IIRED (
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007	a Ave, Su 007	lite 200		Boeing-SSFL NPDES Routine Outfall 002 GRAB	PDES 1 002	<u> </u>	***									Field (Log	Field readings: (Log in and include in
Test America Contact: Debby Wilson	ontact:	Debby Wi	ilson				CE (624)	HEM)								Teport Temp	report Temp and pH) Temp *F = 5 O
Project Manager: Bronwyn Kelly Sampler: Ric た Gpが A6	Brog	wyn Kelly 69 27 A	308	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515			ר ADG-ג,ו, EC	1-4991) sees 	able Solids				,				Time of rea
Sample Sample Description	Sample Matrix	Container Type	Cont.	Sampling Date/Time	Preservative	Bottle #	1,1-D										Comments
Outfall 002	8	VOAs	ı,	100: 80-4 20: 30-4	ICI.	1A, 1B, 1C, 1D, 1E	×					_					
Ouffall 002	8	1L Amber	2		ΗCI	2A, 2B		×									
Outfall 002	W	1L Poly	-		None	8			×								
Outfall 002	Α	500 mL Poly	y 2	_	None	4A, 4B			×								
Trip Blanks	8	VOAs	ю.	25:80	豆	5A, 5B, 5C	×										
								+									
									1								
			_					\dashv									
								\dashv	-					\dashv			
			\perp				\uparrow					_		+			
			-														
	These	These Samples are the Grab	are #	he Grab Portion	of Outfall	Portion of Outfall 002 for this storm event.	storm	event.	Comp	osite sam	ples will	Follow	Composite samples will follow and are to be added to this work order.	be add	led to thi	s work o	rder.
Relinquished By			Date/Time:	ime: 4-/3.	-13.2012	Received By			Datel	Dare/Time:	7 27	Turn-aroun	Turn-around time: (Check)	e: (Check)	ć.		}
1.2.		دء		スジ	0	S S	L			The same of the sa	いる	_		5 Day:	Normal:	X	
Relinquished By		The state of the s	Date/Til	Date/Time: 4-13-12		Received By			Pate/Time:	Time:		Sample	integrity	. (Check) On loe:			
Relinquished By		1	Date/Time:			Received By		12	Date/Time	1	4.13.12	Data No Le	equireme	: (Check)	NPDES Level IV:	evel IV:	
					-	1		17		,			6	g			

Client Name/Address:	SS:		۲	Project:									A	ALYSI	ANALYSIS REQUIRED	RED				Г
MWH-Arcadia				Roeing-SSFI NPDES	I NPDES						-	F			2	ׅׅׅׅׅ֝֟֝֝֟֝֟֝֟֝֟֝֟֜֜֟֟֓֓֓֓֟				
618 Michillinda Ave, Suite 200 Arcadia, CA 91007	s, Suite 200	0	0	Routine Outfall 002 COMPOSITE	utfall 002 E		Hg, Cd,													
Test America Contact: Debby Wilson	act: Debby	y Wils					tals: Cu, Pb,			Perchlorate				toluene, Bis(2-					oftommo	
Project Manager: Bronwyn Kelly	3ronwon Ke	<u>}</u>	1	Phone Number	Der:		əM e			'N- ^z (ottir ON ,					Colline	
Complex Dr. 4 12 And C. N.	7	ر د		(626) 568-6691	. 691		verable	i all cor legrees	ABM)	ΟN+ ^ε Ο	1-eithte-N DS, TS	(320:	(809)	7,4 Dir.						
Samplet.	· 2	•		(626) 568-6515	1. 515					N ԠC			_	xyl)pl						
Sample Sample Description Matrix	ple Container	Ī. —	# of Cont.	Sampling Date/Time	Preservative	'e Bottle #	Total I Se, Zr			CL' 80				- 9' ⊅ '∂						
Outfall 002 W	<u> </u>	λίς	-	45.61-4	HNO ₃	6A		 	 		 	+	+-	?	ļ					
Outfail 002 Dup W	1L Poly	è	-		HNOs	6B	×	-	igg		-	_	_							Π
Outfall 002 W	1L Amber	ja Pe	2	-	None	7A, 7B		×	_			<u> </u>	_							
Outfall 002 W	1L Poly	숡	-		None	8		×				<u> </u>								
Outfall 002 W	500 mL Poly	Poly	2		None	9A, 9B			×		_	ļ								
Outfall 002 W	500 mL Poly	Polý	2		None	10A, 10B		_		×										
Outfall 002 W	500 mL Poly	Poly	-		None	=					×									
Outfall 002 W	500 mL Poly	Poly	7		None	12A, 12B					×	,,								
Outfall 002 W	500 mL Poly	Poly	-		H ₂ SO ₄	13						×								
Outfall 002 W	1L Amber	ber	7		None	14A, 14B							×							<u> </u>
Outfall 002 W	1L Amber	per	2	4-12-2017	/7 None	15A, 15B								×						
											-									П
			1	COCF	COC Page 2 of 3 and Page 3,		of 3 are	the co	nposite	Samp	les for	Outfa	II 002	for thi	of 3 are the composite samples for Outfall 002 for this storm event.	event.				
				=	These must be added to the	S.	ame work order for	S C C C	for CQ	C Page	3 1 of 3	for O	utfall ()02 for	of 3 for Outfall 002 for the same event	e event				
Relinguished By	N	۵	Date/Time:	5/2/ 5/2/	21.25-41-	Received B	1 hr	M		ate/Tigned	14-1	1/1	Turn-arou 24 Hour. 48 Hour.	round tim ur	Turn-around time: (Check) 24 Hour: 72 Hour: 48 Hour: 5 Day:		10 Day:			
Relinquisyled By	Man		Date/Time: 4 -		12/2	Received By	}		Ď	Date/Time:		_	Sample	e Integrity	•	ر ک	` .) '			
		ļ			(1:9)	-							T Intact:	4	On Ice:					
Kelindaished By	5	Ö	Date/Time:	άν		Received By	ر ر	_	ة <u>بسر</u>	Date/Time:			Data R	tequireme	Data Requirements: (Check)					
						$\frac{1}{2}$	7)	イス) ()	3	monto	ر ح	No Level IV:	/el I≷	All Level IV:		NPDES Level IV:	el IV:		
									>			بو	روا			}				

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		Comments					Filter w/in 24hrs of receipt at lab	Unfiltered and unpreserved	analysis	Only test if first or second rain events of the year									ارا		1	¥ ≥
ANALYSIS REQUIRED																his storm event.	or the same event.	÷	48 Hour: 5 Day: Normal:	Sample Integrity: (Check)	Data Radi (rements (Chack)	No Level IV: _ All Level IV: _ NPDES Level IV:
ANALY), Sr-9(926 (90	(0.80 S mu (0.40 o 0.1) (9) 1 Radii 28 (90	H) m S mis Sr-13 T oir	Tritiur Comb Radiu 40, Ca		,	×	×	×					COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 002 for this storm event.	e work order for COC Page 1 of 3 for Outfall 002 for the same event.	Date/Time: 4-14-12	12:35	Date/Time:	Date/Time:	1:01 ornalla 10:12
	n' bp' Hô' Cq' 26'	als: Cu	təM	pevlos	esiQ	Bottle # Total	16 ×	17A	17B	18	19					ge 3 of,3 are	e sanne work	ived By		Received By	Received By	
	002		5.			Preservative Bot	None	None 1	None 1	None	NaOH					2 of 3 and Pa	e added to th	(1 Rece		Rece	Rece	\bigcirc)
Project:	Boeing-SSFL NPDES Routine Outfall 002 COMPOSITE		Phone Number:	(626) 568-6691 Fax Number:	(626) 568-6515		1/08.51.4			2	1/20-5/-4					COC Page	These must be added to the sam	0 €-1 1-4 :	2:35	Date/Time: 4-14-17	ii.	
						# of Cont.	+	-	-	-	-							ate/Tim		ate/Tim	Date/Time:	
	uite 200 Debby Wils		nwyn Kelly	39-96-		Container Type	1L Poly	2.5 Gal Cube	500 mL Amber	1 Gal Cube	500 mL Poly	-		-				٥		m		
dress:	ia Ave, S 1007 Contact:		er: Bro	1 × 5		Sample Matrix	A	*	>	>	3							,	j	1		_
Client Name/Address:	MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson		Project Manager: Bronwyn Kelly	Sampler Rick Byrac		Sample Description	Outfall 002	COC -94-: C	Outrall 002	Outfall 002	Outfall 002							Relinquished By	8	Relinquished By	Relinquished By	

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Page 107 of 109

Login Sample Receipt Checklist

Client: MWH Americas Inc Job Number: 440-8624-1

Login Number: 8624 List Source: TestAmerica Irvine

List Number: 1 Creator: Kim, Will

Cleator. Killi, Will		
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.	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	Rick Banaga
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.	True	
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.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Login Sample Receipt Checklist

Client: MWH Americas Inc Job Number: 440-8624-1

Login Number: 8694 List Source: TestAmerica Irvine

List Number: 1 Creator: Perez, Angel

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	

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APPENDIX G

Section 7

Outfall 008 – April 13, 2012

MEC^X Data Validation Reports



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-8620-1

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: 440-8620-1

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 008 composite	440-8693-1	G2D170479-001, S204069-01	Water	4/13/2012 6:55:00 PM	1613B, 200.7, 200.8, 245.1, 314.0, 625, 900. 901.1, 903.1, 904, 905, 906, SM 2540D, SM 2340B, ASTM D5174

II. Sample Management

No anomalies were observed regarding sample management. Eberline did not note the temperature upon receipt; however, due to the nonvolatile nature of the analytes, no qualifications were necessary. The remaining 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 upon receipt at TestAmerica-West Sacramento. As the samples were delivered by courier to TestAmerica-Irvine, custody seals were not required. TestAmerica-Irvine did not utilize custody seals to ship the samples via FedEx to Eberline. If necessary, the client ID was added to the sample result summary by the reviewer.

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Data Qualifier Reference Table

Qualifie	r 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
Н	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
С	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.
В	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.
Е	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
Α	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	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.
Р	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.
* , *	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: June 4, 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.
 - o 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.
 - o 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 following were not detected in the method blank: 2,3,7,8-TCDD, 2,3,7,8-TCDF, 1,2,3,7,8-PeCDD, total TCDF, and total PeCDD. The method blank had detects reported above the EDL for all remaining target compounds and totals. Several of the method blank results were reported as EMPCs; however, the reviewer deemed it appropriate to evaluate all method blank results for the purpose of qualifying sample

results. Individual isomer results detected in the sample between the EDL and the reporting limit were qualified as nondetected "U," at the level of contamination. The method blank concentration of OCDD was insufficient to qualify the sample result. The same peaks comprised the method blank and sample totals for TCDD, PeCDF and HpCDF; therefore, those were qualified as nondetected, "U," in the sample. Totals for HxCDD, HpCDD, and total HxCDF were qualified as estimated, "J," as only a portion of the total was considered method blank contamination.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613.
- 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 for all internal standards.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. A confirmation analysis was performed for 2,3,7,8-TCDF; however, the original result was not confirmed. The original result was rejected, "R," in favor of the nondetected confirmation result.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any reportable sample 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 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.

Results reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Results for 1,2,3,7,8-PeCDD and total PeCDD reported as EMPCs were qualified as estimated nondetects, "UJ," at the level of the EMPC. Remaining totals containing isomers reported as EMPCs or other EMPC peaks were qualified as estimated, "J."

B. EPA METHODS 200.7, 200.8, and 245.1—Metals and Mercury

Reviewed By: P. Meeks Date Reviewed: June 4, 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 and ICP-MS metals and 28 days for mercury, were met.
- Tuning: The mass calibration and resolution checks criteria were met. All tuning solution %RSDs were ≤5%, and all masses of interest were calibrated to ≤ 0.1 amu and ≤0.9 amu at 10% peak height.
- Calibration: Calibration criteria were met. Mercury initial calibration r² values were ≥0.995 and all initial and continuing calibration recoveries were within 90-110% for the ICP and ICP-MS metals and 85-115% for mercury. CRDL/CRI recoveries were within the control limits of 70-130%.
- Blanks: Dissolved boron was detected in the method blank at 31.7 µg/L; therefore, dissolved boron detected in the sample was qualified as nondetected, "U." Dissolved arsenic was reported in a bracketing CCB at -7.9 µg/L; therefore, nondetected dissolved arsenic in the sample was qualified as estimated, "UJ." Method blanks and CCBs had no other applicable detects.
- Interference Check Samples: Total selenium was recovered below the control limit at 74%; therefore, total selenium nondetected in the sample was qualified as estimated, "UJ." The remaining recoveries were within 80-120%. There were target compounds present in the ICSA solution but not at concentrations indicative of matrix interference.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratoryestablished QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for the dissolved ICP-MS analytes. Recoveries and RPDs were within laboratory-established QC limits.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards Performance: All sample internal standard intensities were within 60-125% of the internal standard intensities measured in the initial calibration.

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

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. EPA METHOD 625—Semivolatile Organic Compounds (SVOCs)

Reviewed By: L. Calvin

Date Reviewed: June 4, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the MEC^{\times} Data Validation Procedure for Semivolatile Organics (DVP-3, Rev. 0), EPA Method 625, and the National Functional Guidelines for Organic Data Review (10/99).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted within seven days of collection and analyzed within 40 days of extraction.
- GC/MS Tuning: The DFTPP tunes met the method abundance criteria. The sample was analyzed within 12 hours of the DFTPP injection time.
- Calibration: The initial calibration average RRFs and the ICV and continuing calibration RRFs were ≥0.05 for all target compounds. The initial calibration %RSDs were ≤35%, or r² values ≥0.995. The ICV %Ds for benzidine, benzoic acid, hexachlorocyclopentadiene, and phenol exceeded 20%. Sample results for the %D outliers, all nondetects, were qualified as estimated, "UJ." The remaining ICV and CCV %Ds were ≤20% for all applicable target compounds.
- Blanks: The method blank had no target compound detects above the MDL.
- Blank Spikes and Laboratory Control Samples: In the LCS, 4-nitrophenol was recovered above the QC limits; however, 4-nitrophenol was not detected in the associated sample.

Remaining recoveries for applicable target compounds were within laboratory-established QC limits.

- Surrogate Recovery: Recoveries were within laboratory-established QC limits.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- 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 internal standard area counts and retention times were within the control limits established by the continuing calibration standards:
 -50%/+100% for internal standard areas and ±30 seconds for retention times.
- Compound Identification: Compound identification was verified. Review of the sample chromatogram, retention times, and spectra indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified. The reporting limits were supported by the low point of the initial calibration and the laboratory MDLs. Any result reported between the MDL and the reporting limit was qualified as estimated, "J," and coded with "DNQ" in order to comply with the NPDES permit. Reported nondetects are valid to the reporting limit.

D. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks Date Reviewed: June 4, 2012

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

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. 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: Total uranium was recovered nominally above the control limit; therefore, total uranium detected in the sample was qualified as estimated, "J." Strontium was recovered below the control limit; therefore nondetected strontium in the sample was qualified as estimated, "UJ." The recoveries were within laboratory-established control limits.
- Laboratory Duplicates: There were no laboratory duplicate analyses performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.
- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium by the laboratory.
- 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.
 - o Field Duplicates: There were no field duplicate samples identified for this SDG.

E. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks Date Reviewed: June 4, 2012

The sample 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 r² value was ≥0.995 and all initial and continuing calibration recoveries were within 90-110%. The IPC recovery was within the method control limit of 80-120%. ICCS recovery was within the method control limit of 75-125%.
- Blanks: Method blanks and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: Recoveries were within the methodestablished QC limits of 85-115%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on a sample in this SDG. Method accuracy was evaluated based on LCS results.
- 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.

F. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: June 4, 2012

The sample 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), Standard Method 2540D and 2340B, and the National Functional Guidelines for Inorganic Data Review (7/02).

DATA VALIDATION REPORT Project: SSFL NPDES SDG: 440-8620-1

- Holding Times: The analytical holding time, 7 hours, was met.
- Calibration: The balance calibration check logs were acceptable.
- Blanks: The method blank had no detect for TSS.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratoryestablished 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 the LCS result.
- 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.

12 Revision 0

Validated Sample Result Forms 440-8620-1

Analysis Method 1613B

Sample Name Outfall 008 composite Matrix Type: Water Validation Level: IV

Lab Sample Name: 440-8693-1 **Sample Date:** 4/13/2012 6:55:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.000050	0.0000004	ug/L	ЈВ	U	В
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000050	0.0000001	ug/L	J Q B	U	В
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000050	0.0000001	ug/L	J Q B	U	В
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000050	0.0000000	ug/L	J Q B	U	В
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000050	0.0000000	ug/L	J B	U	В
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000050	0.0000000	ug/L	J B	U	В
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000050	0.0000000	ug/L	J Q B	U	В
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000050	0.0000000	ug/L	J Q B	U	В
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000050	0.0000000	ug/L	J Q B	U	В
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000050	0.0000006	ug/L	J Q	UJ	*III
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000050	0.0000004	ug/L	J Q B	U	В
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.000050	0.0000000	ug/L	J Q B	U	В
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000050	0.0000004	ug/L	J Q B	U	В
2,3,7,8-TCDD	1746-01-6	ND	0.000010	0.0000006	ug/L		U	
2,3,7,8-TCDF	51207-31-9	0.000001	0.000010	0.0000003	ug/L	J Q	R	D
2,3,7,8-TCDF	51207-31-9	ND	0.000010	0.0000022	ug/L		U	
OCDD	3268-87-9	0.00052	0.00010	0.0000016	ug/L	В		
OCDF	39001-02-0	ND	0.00010	0.0000003	ug/L	J B	U	В
Total HpCDD	37871-00-4	0.00011	0.000050	0.0000004	ug/L	J B	J	B, lab incorrectly J qualified
Total HpCDF	38998-75-3	ND	0.000050	0.0000001	ug/L	J Q B	U	В
Total HxCDD	34465-46-8	0.000015	0.000050	0.0000000	ug/L	J Q B	J	B, DNQ, *III
Total HxCDF	55684-94-1	0.000030	0.000050	0.0000000	ug/L	J Q B	J	B, DNQ, *III
Total PeCDD	36088-22-9	ND	0.000050	0.0000006	ug/L	J Q	UJ	*III
Total PeCDF	30402-15-4	ND	0.000050	0.0000004	ug/L	J Q B	U	В
Total TCDD	41903-57-5	ND	0.000010	0.0000000	ug/L	J B	U	В
Total TCDF	55722-27-5	0.000002	0.000010	0.0000003	ug/L	J Q	J	DNQ, *III

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Analysis Method 200.7 Rev 4.4

Sample Name	Outfall 008 co	omposite	Matri	іх Туре:	Water	7	alidation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Aluminum	7429-90-5	12000	50	40	ug/L			
Aluminum, Dissolved	7429-90-5	660	50	40	ug/L			
Arsenic	7440-38-2	ND	10	7.0	ug/L		UJ	В
Arsenic, Dissolved	7440-38-2	ND	10	7.0	ug/L		U	
Beryllium	7440-41-7	ND	10	4.5	ug/L		U	
Beryllium, Dissolved	7440-41-7	ND	2.0	0.90	ug/L		U	
Boron	7440-42-8	ND	0.25	0.10	mg/L		U	
Boron, Dissolved	7440-42-8	ND	0.054	0.020	mg/L	MB	U	В
Calcium	7440-70-2	17	0.50	0.25	mg/L			
Calcium, Dissolved	7440-70-2	14	0.10	0.050	mg/L			
Chromium	7440-47-3	16	25	10	ug/L	J,DX	J	DNQ
Chromium, Dissolved	7440-47-3	ND	5.0	2.0	ug/L		U	
Iron	7439-89-6	16	0.20	0.075	mg/L			
Iron, Dissolved	7439-89-6	0.66	0.040	0.015	mg/L			
Magnesium	7439-95-4	6.3	0.10	0.060	mg/L			
Magnesium, Dissolved	7439-95-4	2.0	0.020	0.012	mg/L			
Nickel	7440-02-0	20	50	10	ug/L	J,DX	J	DNQ
Nickel, Dissolved	7440-02-0	2.7	10	2.0	ug/L	J,DX	J	DNQ
Silver	7440-22-4	ND	50	30	ug/L		U	
Silver, Dissolved	7440-22-4	ND	10	6.0	ug/L		U	
Vanadium	7440-62-2	30	50	15	ug/L	J,DX	J	DNQ
Vanadium, Dissolved	7440-62-2	ND	10	3.0	ug/L		U	
Zinc	7440-66-6	64	100	30	ug/L	J,DX	J	DNQ
Zinc, Dissolved	7440-66-6	ND	20	6.0	ug/L		U	

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Ana	lycic	Method	200.8
Anai	vsis	wieinoa	200.0

Sample Name	Outfall 008 co	omposite	Matri	x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Antimony	7440-36-0	ND	10	1.5	ug/L		U	
Antimony, Dissolved	7440-36-0	ND	10	1.5	ug/L		U	
Cadmium	7440-43-9	ND	5.0	0.50	ug/L		U	
Cadmium, Dissolved	7440-43-9	ND	5.0	0.50	ug/L		U	
Copper	7440-50-8	18	10	2.5	ug/L			
Copper, Dissolved	7440-50-8	3.6	10	2.5	ug/L	J,DX	J	DNQ
Lead	7439-92-1	10	5.0	1.0	ug/L			
Lead, Dissolved	7439-92-1	ND	5.0	1.0	ug/L		U	
Selenium	7782-49-2	ND	10	2.5	ug/L		UJ	I
Selenium, Dissolved	7782-49-2	ND	10	2.5	ug/L		U	
Γhallium	7440-28-0	ND	5.0	1.0	ug/L		U	
Thallium, Dissolved	7440-28-0	1.2	5.0	1.0	ug/L	J,DX	J	DNQ
Analysis Metho	d 245.1							
Sample Name	Outfall 008 co	omposite	Matri	х Туре:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/L		U	
Mercury, Dissolved	7439-97-6	ND	0.20	0.10	ug/L		U	
Analysis Metho	d 314.0							
Sample Name	Outfall 008 co	omposite	Matri	x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation	Validation
		vaiue			Omis	Quanner	Qualifier	Notes

Tuesday, June 05, 2012 Page 3 of 7

Sample Name	Outfall 008 co	omposite	Matri	х Туре:	Water	7	alidation Le	evel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,4-Trichlorobenzene	120-82-1	ND	0.948	0.0948	ug/L		U	
1,2-Dichlorobenzene	95-50-1	ND	0.474	0.0948	ug/L		U	
1,2-Diphenylhydrazine(as Azobenzene)	122-66-7	ND	0.948	0.190	ug/L		U	
1,3-Dichlorobenzene	541-73-1	ND	0.474	0.0948	ug/L		U	
1,4-Dichlorobenzene	106-46-7	ND	0.474	0.190	ug/L		U	
2,4,6-Trichlorophenol	88-06-2	ND	0.948	0.0948	ug/L		U	
2,4-Dichlorophenol	120-83-2	ND	1.90	0.190	ug/L		U	
2,4-Dimethylphenol	105-67-9	ND	1.90	0.284	ug/L		U	
2,4-Dinitrophenol	51-28-5	ND	4.74	0.853	ug/L		U	
2,4-Dinitrotoluene	121-14-2	ND	4.74	0.190	ug/L		U	
2,6-Dinitrotoluene	606-20-2	ND	4.74	0.0948	ug/L		U	
2-Chloronaphthalene	91-58-7	ND	0.474	0.0948	ug/L		U	
2-Chlorophenol	95-57-8	ND	0.948	0.190	ug/L		U	
2-Methylnaphthalene	91-57-6	ND	0.948	0.190	ug/L		U	
2-Methylphenol	95-48-7	ND	1.90	0.0948	ug/L		U	
2-Nitroaniline	88-74-4	ND	4.74	0.0948	ug/L		U	
2-Nitrophenol	88-75-5	ND	1.90	0.0948	ug/L		U	
3,3'-Dichlorobenzidine	91-94-1	ND	4.74	0.474	ug/L		U	
3-Nitroaniline	99-09-2	ND	4.74	0.948	ug/L		U	
4,6-Dinitro-2-methylphenol	534-52-1	ND	4.74	0.284	ug/L		U	
4-Bromophenyl phenyl ether	101-55-3	ND	0.948	0.190	ug/L		U	
4-Chloro-3-methylphenol	59-50-7	ND	1.90	0.190	ug/L		U	
4-Chloroaniline	106-47-8	ND	1.90	0.284	ug/L		U	
4-Chlorophenyl phenyl ether	7005-72-3	ND	0.474	0.190	ug/L		U	
4-Methylphenol	106-44-5	ND	4.74	0.190	ug/L		U	
4-Nitroaniline	100-01-6	ND	4.74	0.474	ug/L		U	
4-Nitrophenol	100-02-7	ND	4.74	2.37	ug/L	LQ	U	
Acenaphthene	83-32-9	ND	0.474	0.190	ug/L		U	
Acenaphthylene	208-96-8	ND	0.474	0.190	ug/L		U	
Aniline	62-53-3	ND	9.48	0.284	ug/L		U	
Anthracene	120-12-7	ND	0.474	0.0948	ug/L		U	
Benzidine	92-87-5	ND	4.74	0.948	ug/L		UJ	С
Benzo[a]anthracene	56-55-3	ND	4.74	0.0948	ug/L		U	
Benzo[a]pyrene	50-32-8	ND	1.90	0.0948	ug/L		U	
Benzo[b]fluoranthene	205-99-2	ND	1.90	0.0948	ug/L		U	

Tuesday, June 05, 2012 Page 4 of 7

Analysis Method 625

Benzo[g,h,i]perylene	191-24-2	ND	4.74	0.0948	ug/L		U	
Benzo[k]fluoranthene	207-08-9	ND	0.474	0.190	ug/L		U	
Benzoic acid	65-85-0	ND	19.0	2.84	ug/L		UJ	C
Benzyl alcohol	100-51-6	ND	4.74	0.0948	ug/L		U	
bis (2-chloroisopropyl) ether	108-60-1	ND	0.474	0.0948	ug/L		U	
Bis(2-chloroethoxy)methane	111-91-1	ND	0.474	0.0948	ug/L		U	
Bis(2-chloroethyl)ether	111-44-4	ND	0.474	0.0948	ug/L		U	
Bis(2-ethylhexyl) phthalate	117-81-7	1.87	4.74	1.61	ug/L	J,DX	J	DNQ
Butyl benzyl phthalate	85-68-7	ND	4.74	0.664	ug/L		U	
Chrysene	218-01-9	ND	0.474	0.0948	ug/L		U	
Dibenz(a,h)anthracene	53-70-3	ND	0.474	0.0948	ug/L		U	
Dibenzofuran	132-64-9	ND	0.474	0.0948	ug/L		U	
Diethyl phthalate	84-66-2	0.166	0.948	0.0948	ug/L	J,DX	J	DNQ
Dimethyl phthalate	131-11-3	ND	0.474	0.190	ug/L		U	
Di-n-butyl phthalate	84-74-2	ND	1.90	0.284	ug/L		U	
Di-n-octyl phthalate	117-84-0	ND	4.74	0.190	ug/L		U	
Fluoranthene	206-44-0	ND	0.474	0.0948	ug/L		U	
Fluorene	86-73-7	ND	0.474	0.0948	ug/L		U	
Hexachlorobenzene	118-74-1	ND	0.948	0.0948	ug/L		U	
Hexachlorobutadiene	87-68-3	ND	1.90	0.190	ug/L		U	
Hexachlorocyclopentadiene	77-47-4	ND	4.74	0.0948	ug/L		UJ	C
Hexachloroethane	67-72-1	ND	2.84	0.190	ug/L		U	
Indeno[1,2,3-cd]pyrene	193-39-5	ND	1.90	0.0948	ug/L		U	
Isophorone	78-59-1	ND	0.948	0.0948	ug/L		U	
Naphthalene	91-20-3	ND	0.948	0.0948	ug/L		U	
Nitrobenzene	98-95-3	ND	0.948	0.0948	ug/L		U	
N-Nitrosodimethylamine	62-75-9	ND	1.90	0.0948	ug/L		U	
N-Nitrosodi-n-propylamine	621-64-7	ND	1.90	0.0948	ug/L		U	
N-Nitrosodiphenylamine	86-30-6	ND	0.948	0.0948	ug/L		U	
Pentachlorophenol	87-86-5	ND	1.90	0.379	ug/L		U	
Phenanthrene	85-01-8	ND	0.474	0.0948	ug/L		U	
Phenol	108-95-2	ND	0.948	0.284	ug/L		UJ	C
Pyrene	129-00-0	ND	0.474	0.0948	ug/L		U	

Tuesday, June 05, 2012 Page 5 of 7

Analysis Method Gamma Spec K-40 CS-137

							7 10 1 40 T	1 137
Sample Name	Outfall 008 co			x Type:			Validation Le	evel: 1V
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	0.091	20	4.54	pCi/L	U	U	
Potassium-40	13966002	-7.82	25	66.2	pCi/L	U	U	
Analysis Method	d Gross	s Alpha	and Be	eta				
Sample Name	Outfall 008 co	omposite	Matri	x Type:	Water	7	Validation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	1.32	3	1	pCi/L	J	J	C, DNQ
Gross Beta	12587472	5.44	4	1.12	pCi/L			
Analysis Method	d Radii	ım 226						
Sample Name	Outfall 008 co	omposite	Matri	х Туре:	Water	7	Validation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.234	1	0.675	pCi/L	U	U	
Analysis Method	d Radii	ım 228						
Sample Name	Outfall 008 co	omposite	Matri	x Type:	Water	7	Validation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.699	1	0.395	pCi/L	J	J	DNQ
Analysis Method	d SM 2	340B						
Sample Name	Outfall 008 co	omposite	Matri	х Туре:	Water	7	Validation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness, as CaCO3	STL00009	68	0.33	0.17	mg/L			
Hardness, as CaCO3, Dissolv	ved STL00009	42	0.33	0.17	mg/L			

Tuesday, June 05, 2012 Page 6 of 7

Analysis Method SM 2540D

Sample Name	Outfall 008 co	omposite	Matri	x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	STL00161	200	13	13	mg/L			
Analysis Metho	od Stron	tium 90)					
Sample Name	Outfall 008 co	omposite	Matri	x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.049	2	1.06	pCi/L	U	UJ	L
Analysis Metho	od Tritiu	ım						
Sample Name	Outfall 008 co	omposite	Matri	х Туре:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-4.64	500	153	pCi/L	U	U	
Analysis Metho	od Urani	ium, Ca	ombine	d				
Sample Name	Outfall 008 co	omposite	Matri	x Type:	Water	V	alidation Le	vel: IV
Lab Sample Name:	440-8693-1	Sam	ple Date:	4/13/201	2 6:55:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes

Tuesday, June 05, 2012 Page 7 of 7

APPENDIX G

Section 8

Outfall 008 – April 13, 2012
Test America Analytical Laboratory Reports



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: 440-8620-1

Client Project/Site: Annual Outfall 008 Grab

Revision: 1

For:

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

Attn: Bronwyn Kelly

Delby Wilson

Authorized for release by: 6/15/2012 10:24:01 AM

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

.....LINKS

Review your project results through

Total Access

Have a Question?



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

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

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

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

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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

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Debby Wilson Project Manager I 6/15/2012 10:24:01 AM -

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Client: MWH Americas Inc Project/Site: Annual Outfall 008 Grab TestAmerica Job ID: 440-8620-1

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Sample Summary

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-8620-1	Outfall 008	Water	04/13/12 15:30	04/13/12 18:46
440-8620-2	Trip Blank	Water	04/13/12 15:30	04/13/12 18:46
440-8693-1	Outfall 008 composite	Water	04/13/12 18:55	04/14/12 16:15

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Case Narrative

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Job ID: 440-8620-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-8620-1

Comments

Revised to correct the basis for batch 21614 from total to dissolved.

Receipt

The samples were received on 4/13/2012 6:46 PM and 4/14/2012 4:15 PM; the samples arrived in good conditions, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7 C and 3.6 C.

GC/MS VOA

Method(s) 624: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 19861 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

GC/MS Semi VOA

Method(s) 625: Surrogate recovery for the following sample(s) was outside control limits: Grab (440-8891-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 625: The continuing calibration verification (CCV) for 2-nitroaniline, 4-nitrophenol, hexachlorocyclopentadiene, and n-nitrosodi-n-propylamine associated with batch 21217 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.

Method(s) 625: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for batch 21041 exceeded control limits for the following analytes: 4-nitrophenol. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 625: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 21041 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 625: The following sample(s) was diluted due to the abundance of non-target analytes: Grab (440-8891-1). Elevated reporting limits (RLs) are provided.

Method(s) 625: The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 8891 was outside control limits for 4-Chloroaniline and 4-Nitroaniline. Non-homogeneity of the sample matrix is suspected.

Method(s) 625: No percent recoveries were calculated for 4-Nitrophenol and Benzoic Acid in the MS and MSD. The sample used for the MS/MSD required dilution. Because of this, the spike compound were diluted below the detection limits.

No other analytical or quality issues were noted.

HPLC

Method(s) 314.0, 314.0 LL: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for perchlorate batch 20654 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

Metals

No analytical or quality issues were noted.

General Chemistry

Method(s) SM 4500 NH3 C: Sample(s) preserved pH is 6

No other analytical or quality issues were noted.

TestAmerica Irvine 6/15/2012

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Case Narrative

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Job ID: 440-8620-1 (Continued)

Laboratory: TestAmerica Irvine (Continued)

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 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.

This sample was analyzed for confirmation of 2,3,7,8-TCDF on the DB225 column (5D2). The continuing calibration verification (CCV) ST0424B from 5D2 analyzed on April 24, 2012 at 23:19 is out of control for the Cleanup Recovery Standard (CRS) 37Cl-2,3,7,8-TCDD with a high bias. All samples meet control limits for the CRS in both the DB225 confirmation analysis and the initial DB5 analysis. The CRS is in control in the CCV from the initial DB5 analysis. The CRS is not used in the calculation of 2,3,7,8-TCDF. The high bias of the CRS in the confirmation run is isolated to that compound only. The CRS is not reported from this run. For these reasons there is no impact on the data.

Organic Prep

No analytical or quality issues were noted.

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Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

Client Sample ID: Outfall 008 Date Collected: 04/13/12 15:30

Date Received: 04/13/12 18:46

Lab Sample ID: 440-8620-1

Matrix: Water

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1,1,1-Trichloroethane	ND ND	0.50	0.30	ug/L			04/17/12 02:31	
2-Chloroethyl vinyl ether	ND	2.0	1.8	ug/L			04/15/12 18:06	
1,1,2,2-Tetrachloroethane	ND	0.50	0.30	ug/L			04/17/12 02:31	
Acrolein	ND	5.0	4.0	ug/L			04/15/12 18:06	
1,1,2-Trichloroethane	ND	0.50	0.30	ug/L			04/17/12 02:31	
Acrylonitrile	ND	2.0	1.2	ug/L			04/15/12 18:06	
1,1-Dichloroethane	ND	0.50	0.40	ug/L			04/17/12 02:31	
1,1-Dichloroethene	ND	0.50	0.42	ug/L			04/17/12 02:31	
1,2-Dichlorobenzene	ND	0.50	0.32	ug/L			04/17/12 02:31	
1,2-Dichloroethane	ND	0.50	0.28	ug/L			04/17/12 02:31	
1,2-Dichloropropane	ND	0.50	0.35	ug/L			04/17/12 02:31	
1,3-Dichlorobenzene	ND	0.50	0.35	ug/L			04/17/12 02:31	
1,2,3-Trichloropropane	ND	0.50	0.40	ug/L			04/17/12 02:31	
1,4-Dichlorobenzene	ND	0.50		ug/L			04/17/12 02:31	
Benzene	ND	0.50		ug/L			04/17/12 02:31	
Bromoform	ND	0.50	0.40	ug/L			04/17/12 02:31	
Bromomethane	ND	0.50		ug/L			04/17/12 02:31	
Carbon tetrachloride	ND	0.50		ug/L			04/17/12 02:31	
Chlorobenzene	ND	0.50	0.36	ug/L			04/17/12 02:31	
Dibromochloromethane	ND	0.50		ug/L			04/17/12 02:31	
Chloroethane	ND	0.50		ug/L			04/17/12 02:31	
Chloroform	ND	0.50		ug/L			04/17/12 02:31	
Chloromethane	ND	0.50		ug/L			04/17/12 02:31	
cis-1,3-Dichloropropene	ND	0.50		ug/L			04/17/12 02:31	
Bromodichloromethane	ND	0.50		ug/L			04/17/12 02:31	
Ethylbenzene	ND	0.50		ug/L			04/17/12 02:31	
Methylene Chloride	ND	1.0		ug/L			04/17/12 02:31	
Tetrachloroethene	ND	0.50		ug/L			04/17/12 02:31	
Toluene	ND	0.50		ug/L			04/17/12 02:31	
trans-1,2-Dichloroethene	ND	0.50		ug/L			04/17/12 02:31	
tert-Butanol	ND	10		ug/L			04/17/12 02:31	
trans-1,3-Dichloropropene	ND	0.50		ug/L			04/17/12 02:31	
Trichlorofluoromethane	ND	0.50		ug/L			04/17/12 02:31	
Vinyl chloride	ND	0.50		ug/L			04/17/12 02:31	
Trichloroethene	ND	0.50		ug/L			04/17/12 02:31	
cis-1,2-Dichloroethene	ND	0.50		ug/L			04/17/12 02:31	
1,2-Dibromoethane (EDB)	ND	0.50		ug/L			04/17/12 02:31	
Diisopropyl ether	ND ND	0.50		ug/L ug/L			04/17/12 02:31	
Methyl tert-butyl ether	ND ND	0.50		ug/L ug/L			04/17/12 02:31	
				-			04/17/12 02:31	
Naphthalene Test amul methyl other	ND ND	0.50		ug/L				
Tert-amyl methyl ether	ND ND	0.50		ug/L			04/17/12 02:31	
Ethyl tert-butyl ether	ND	0.50		ug/L			04/17/12 02:31	
Xylenes, Total	ND	1.0	0.90	ug/L			04/17/12 02:31	
	0/5	,						D" =

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120		04/15/12 18:06	1
Dibromofluoromethane (Surr)	100		80 - 120		04/15/12 18:06	1
4-Bromofluorobenzene (Surr)	102		80 - 120		04/17/12 02:31	1
Dibromofluoromethane (Surr)	90		80 - 120		04/17/12 02:31	1
Toluene-d8 (Surr)	102		80 - 120		04/17/12 02:31	1

Client Sample Results

Client: MWH Americas Inc

Date Received: 04/13/12 18:46

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Client Sample ID: Outfall 008

Date Collected: 04/13/12 15:30

Lab Sample ID: 440-8620-1

Matrix: Water

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

AnalyteResult
Chromium, hexavalentQualifierRLMDL
II.0UnitDPreparedAnalyzedDil FacUnit0.25ug/L0.4/13/12 22:051

General Chemistry

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac HEM 04/26/12 07:22 4.8 mg/L 04/26/12 07:38 ND 1.3

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

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

 Analyte
 Result
 Qualifier
 RL
 RL
 Unit
 D
 Prepared
 Analyzed
 Dil Fac

 Escherichia coli
 500
 2.0
 2.0
 MPN/100mL
 04/13/12 18:57
 1

Client Sample ID: Trip Blank

Lab Sample ID: 440-8620-2

Date Collected: 04/13/12 15:30 Matrix: Water

Date Collected: 04/13/12 15:30 Matrix: Water

Date Received: 04/13/12 18:46

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/17/12 02:58	1
2-Chloroethyl vinyl ether	ND		2.0	1.8	ug/L			04/15/12 18:35	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.30	ug/L			04/17/12 02:58	1
Acrolein	ND		5.0	4.0	ug/L			04/15/12 18:35	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/17/12 02:58	1
Acrylonitrile	ND		2.0	1.2	ug/L			04/15/12 18:35	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/17/12 02:58	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/17/12 02:58	1
1,2-Dichlorobenzene	ND		0.50	0.32	ug/L			04/17/12 02:58	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/17/12 02:58	1
1,2-Dichloropropane	ND		0.50	0.35	ug/L			04/17/12 02:58	1
1,3-Dichlorobenzene	ND		0.50	0.35	ug/L			04/17/12 02:58	1
1,2,3-Trichloropropane	ND		0.50	0.40	ug/L			04/17/12 02:58	1
1,4-Dichlorobenzene	ND		0.50	0.37	ug/L			04/17/12 02:58	1
Benzene	ND		0.50	0.28	ug/L			04/17/12 02:58	1
Bromoform	ND		0.50	0.40	ug/L			04/17/12 02:58	1
Bromomethane	ND		0.50	0.42	ug/L			04/17/12 02:58	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			04/17/12 02:58	1
Chlorobenzene	ND		0.50	0.36	ug/L			04/17/12 02:58	1
Dibromochloromethane	ND		0.50	0.40	ug/L			04/17/12 02:58	1
Chloroethane	ND		0.50	0.40	ug/L			04/17/12 02:58	1
Chloroform	ND		0.50	0.33	ug/L			04/17/12 02:58	1
Chloromethane	ND		0.50	0.40	ug/L			04/17/12 02:58	1
cis-1,3-Dichloropropene	ND		0.50	0.22	ug/L			04/17/12 02:58	1
Bromodichloromethane	ND		0.50	0.30	ug/L			04/17/12 02:58	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/17/12 02:58	1
Methylene Chloride	ND		1.0	0.95	ug/L			04/17/12 02:58	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/17/12 02:58	1
Toluene	ND		0.50	0.36	ug/L			04/17/12 02:58	1
trans-1,2-Dichloroethene	ND		0.50	0.30	ug/L			04/17/12 02:58	1
tert-Butanol	ND		10	6.5	ug/L			04/17/12 02:58	1
trans-1,3-Dichloropropene	ND		0.50	0.32	ug/L			04/17/12 02:58	1

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

Lab Sample ID: 440-8620-2

TestAmerica Job ID: 440-8620-1

Lab Sample ID: 440-8693-1

Matrix: Water

Matrix: Water

Client Sample ID: Trip Blank

Date Collected: 04/13/12 15:30 Date Received: 04/13/12 18:46

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/17/12 02:58	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/17/12 02:58	1
Trichloroethene	ND		0.50	0.26	ug/L			04/17/12 02:58	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/17/12 02:58	1
1,2-Dibromoethane (EDB)	ND		0.50	0.40	ug/L			04/17/12 02:58	1
Diisopropyl ether	ND		0.50	0.25	ug/L			04/17/12 02:58	1
Methyl tert-butyl ether	ND		0.50	0.32	ug/L			04/17/12 02:58	1
Naphthalene	ND		0.50	0.41	ug/L			04/17/12 02:58	1
Tert-amyl methyl ether	ND		0.50	0.33	ug/L			04/17/12 02:58	1
Ethyl tert-butyl ether	ND		0.50	0.28	ug/L			04/17/12 02:58	1
Xylenes, Total	ND		1.0	0.90	ug/L			04/17/12 02:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120			-		04/15/12 18:35	1
Dibromofluoromethane (Surr)	104		80 - 120					04/15/12 18:35	1
4-Bromofluorobenzene (Surr)	100		80 - 120					04/17/12 02:58	1
Dibromofluoromethane (Surr)	97		80 - 120					04/17/12 02:58	1
Toluene-d8 (Surr)	104		80 - 120					04/17/12 02:58	1

Client Sample ID: Outfall 008 composite

Date Collected: 04/13/12 18:55

Date Received: 04/14/12 16:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		0.95	0.076	ug/L		04/15/12 06:21	04/19/12 13:37	1
Diazinon	ND		0.24	0.038	ug/L		04/15/12 06:21	04/19/12 13:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,3-Dimethyl-2-nitrobenzene	104	-	70 - 130				04/15/12 06:21	04/19/12 13:37	1
Perylene-d12	90		70 - 130				04/15/12 06:21	04/19/12 13:37	1
							04/15/12 06:21	04/19/12 13:37	

-	700		70 - 700				0 1/ 10/ 12 00:21	0 11 10/12 10:01	•
_ Method: 625 - Semivolatile Orga	•	•							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	1
Acenaphthylene	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	1
Aniline	ND		9.48	0.284	ug/L		04/20/12 14:44	04/23/12 00:56	1
Anthracene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	1
Benzidine	ND		4.74	0.948	ug/L		04/20/12 14:44	04/23/12 00:56	1
Benzo[a]anthracene	ND		4.74	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	1
Benzo[b]fluoranthene	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	1
Benzo[k]fluoranthene	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	1
Benzoic acid	ND		19.0	2.84	ug/L		04/20/12 14:44	04/23/12 00:56	1
Benzo[a]pyrene	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	1
Bis(2-chloroethoxy)methane	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	1
Bis(2-chloroethyl)ether	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	1
Bis(2-ethylhexyl) phthalate	1.87	J,DX	4.74	1.61	ug/L		04/20/12 14:44	04/23/12 00:56	1
4-Bromophenyl phenyl ether	ND		0.948	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	1
Butyl benzyl phthalate	ND		4.74	0.664	ug/L		04/20/12 14:44	04/23/12 00:56	1
4-Chloro-3-methylphenol	ND		1.90	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	1
2-Chloronaphthalene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	1

Client Sample Results

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Lab Sample ID: 440-8693-1

oampic ib. 440-0030-1

Matrix: Water

Client Sample ID: Outfall 008 composite	
Date Collected: 04/13/12 18:55	

Date Received: 04/14/12 16:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
2-Chlorophenol	ND		0.948	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	
4-Chlorophenyl phenyl ether	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	
Chrysene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
Dibenz(a,h)anthracene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
Di-n-butyl phthalate	ND		1.90	0.284	ug/L		04/20/12 14:44	04/23/12 00:56	
1,2-Dichlorobenzene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
1,3-Dichlorobenzene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
1,4-Dichlorobenzene	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	
3,3'-Dichlorobenzidine	ND		4.74	0.474	ug/L		04/20/12 14:44	04/23/12 00:56	
2,4-Dichlorophenol	ND		1.90	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	
Diethyl phthalate	0.166	J,DX	0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
2,4-Dimethylphenol	ND		1.90	0.284	ug/L		04/20/12 14:44	04/23/12 00:56	
Dimethyl phthalate	ND		0.474	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	
4,6-Dinitro-2-methylphenol	ND		4.74	0.284	ug/L		04/20/12 14:44	04/23/12 00:56	
2,4-Dinitrophenol	ND		4.74	0.853			04/20/12 14:44	04/23/12 00:56	
2,4-Dinitrotoluene	ND		4.74	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	
2,6-Dinitrotoluene	ND		4.74	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
Di-n-octyl phthalate	ND		4.74	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	
1,2-Diphenylhydrazine(as	ND		0.948	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	
Azobenzene)									
Fluoranthene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
Fluorene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
Hexachlorobenzene	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
Hexachlorobutadiene	ND		1.90	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	
Hexachloroethane	ND		2.84	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	
Hexachlorocyclopentadiene	ND		4.74	0.0948			04/20/12 14:44	04/23/12 00:56	
Indeno[1,2,3-cd]pyrene	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
Isophorone	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
4-Methylphenol	ND		4.74	0.190	ug/L		04/20/12 14:44	04/23/12 00:56	
Naphthalene	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
Nitrobenzene	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
2-Nitrophenol	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
4-Nitrophenol	ND	LQ	4.74	2.37	ug/L		04/20/12 14:44	04/23/12 00:56	
N-Nitrosodimethylamine	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
N-Nitrosodiphenylamine	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
N-Nitrosodi-n-propylamine	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
Pentachlorophenol	ND		1.90	0.379	ug/L		04/20/12 14:44	04/23/12 00:56	
Phenanthrene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
Phenol	ND		0.948	0.284	ug/L		04/20/12 14:44	04/23/12 00:56	
Pyrene	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
1,2,4-Trichlorobenzene	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
2,4,6-Trichlorophenol	ND		0.948	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
2-Methylphenol	ND		1.90	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
4-Chloroaniline	ND		1.90	0.284	ug/L		04/20/12 14:44	04/23/12 00:56	
2-Methylnaphthalene	ND		0.948	0.190	-		04/20/12 14:44	04/23/12 00:56	
2-Nitroaniline	ND		4.74	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
3-Nitroaniline	ND		4.74	0.948	ug/L		04/20/12 14:44	04/23/12 00:56	
Dibenzofuran	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
4-Nitroaniline	ND		4.74	0.474	ug/L		04/20/12 14:44	04/23/12 00:56	
Benzo[g,h,i]perylene	ND		4.74	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	
Benzyl alcohol	ND		4.74	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	

Client Sample Results

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Lab Sample ID: 440-8693-1

Matrix: Water

Clie	nt Sa	ampl	e ID:	Outfall	800	composite
					_	

Date Collected: 04/13/12 18:55 Date Received: 04/14/12 16:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		0.474	0.0948	ug/L		04/20/12 14:44	04/23/12 00:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	84		50 - 120				04/20/12 14:44	04/23/12 00:56	1
2-Fluorophenol	66		30 - 120				04/20/12 14:44	04/23/12 00:56	1
2,4,6-Tribromophenol	101		40 - 120				04/20/12 14:44	04/23/12 00:56	1
Nitrobenzene-d5	90		45 - 120				04/20/12 14:44	04/23/12 00:56	1
Terphenyl-d14	121		50 - 125				04/20/12 14:44	04/23/12 00:56	1
Phenol-d6	75		35 - 120				04/20/12 14:44	04/23/12 00:56	1

Method: 300.0 - Anions, Ion Cl	hromatography								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.2		0.50	0.40	mg/L			04/14/12 17:49	1
Nitrate as N	0.59		0.11	0.080	mg/L			04/14/12 17:49	1
Nitrate Nitrite as N	0.59		0.26	0.19	mg/L			04/14/12 17:49	1
Sulfate	4.0		0.50	0.40	mg/L			04/14/12 17:49	1
Nitrite as N	ND		0.15	0.11	mg/L			04/14/12 17:49	1
<u> </u>									

Method: 314.0 - Perchlorate (IC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			04/19/12 21:23	1

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000067	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
Total TCDD	0.0000026	J B	0.000010	0.000000070	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
1,2,3,7,8-PeCDD	0.0000012	JQ	0.000050	0.00000065	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
Total PeCDD	0.0000012	JQ	0.000050	0.00000065	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
1,2,3,4,7,8-HxCDD	0.0000015	JQB	0.000050	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
1,2,3,6,7,8-HxCDD	0.0000026	J B	0.000050	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
1,2,3,7,8,9-HxCDD	0.0000028	JQB	0.000050	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
Total HxCDD	0.000015	JQB	0.000050	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
1,2,3,4,6,7,8-HpCDD	0.000047	J B	0.000050	0.00000046	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
Total HpCDD	0.00011	JB	0.000050	0.00000046	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
OCDD	0.00052	В	0.00010	0.0000016	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
2,3,7,8-TCDF	0.0000013	JQ	0.000010	0.0000039	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
2,3,7,8-TCDF	ND		0.000010	0.0000022	ug/L		04/23/12 09:00	04/25/12 05:30	0.96
Total TCDF	0.0000025	JQ	0.000010	0.0000039	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
1,2,3,7,8-PeCDF	0.0000034	JQB	0.000050	0.00000046	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
2,3,4,7,8-PeCDF	0.0000018	JQB	0.000050	0.00000049	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
Total PeCDF	0.000088	JQB	0.000050	0.00000047	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
1,2,3,4,7,8-HxCDF	0.0000083	J B	0.000050	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
1,2,3,6,7,8-HxCDF	0.0000023	JQB	0.000050	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
2,3,4,6,7,8-HxCDF	0.0000014	JQB	0.000050	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
1,2,3,7,8,9-HxCDF	0.0000016	JQB	0.000050	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
Total HxCDF	0.000030	JQB	0.000050	0.000000040	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
1,2,3,4,6,7,8-HpCDF	0.000018	JQB	0.000050	0.0000013	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
1,2,3,4,7,8,9-HpCDF	0.0000049	JQB	0.000050	0.00000016	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
Total HpCDF	0.000036	JQB	0.000050	0.00000015	ug/L		04/23/12 09:00	04/24/12 22:57	0.96
OCDF	0.000023	JB	0.00010	0.00000032	ug/L		04/23/12 09:00	04/24/12 22:57	0.96

TestAmerica Job II

Project/Site: Annual Outfall 008 Grab

Client: MWH Americas Inc

Client Sample ID: Outfall 008 composite

Date Collected: 04/13/12 18:55 Date Received: 04/14/12 16:15 Lab Sample ID: 440-8693-1

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37CI4-2,3,7,8-TCDD	83		35 - 197	04/23/12 09:00	04/24/12 22:57	0.96
37CI4-2,3,7,8-TCDD	111		35 _ 197	04/23/12 09:00	04/25/12 05:30	0.96
Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	42		25 - 164	04/23/12 09:00	04/24/12 22:57	0.96
13C-1,2,3,7,8-PeCDD	43		25 - 181	04/23/12 09:00	04/24/12 22:57	0.96
13C-1,2,3,4,7,8-HxCDD	45		32 - 141	04/23/12 09:00	04/24/12 22:57	0.96
13C-1,2,3,6,7,8-HxCDD	48		28 - 130	04/23/12 09:00	04/24/12 22:57	0.96
13C-1,2,3,4,6,7,8-HpCDD	61		23 - 140	04/23/12 09:00	04/24/12 22:57	0.96
13C-OCDD	51		17 - 157	04/23/12 09:00	04/24/12 22:57	0.96
13C-2,3,7,8-TCDF	36		24 - 169	04/23/12 09:00	04/24/12 22:57	0.96
13C-2,3,7,8-TCDF	55		24 - 169	04/23/12 09:00	04/25/12 05:30	0.96
13C-1,2,3,7,8-PeCDF	36		24 - 185	04/23/12 09:00	04/24/12 22:57	0.96
13C-2,3,4,7,8-PeCDF	38		21 - 178	04/23/12 09:00	04/24/12 22:57	0.96
13C-1,2,3,6,7,8-HxCDF	48		26 - 123	04/23/12 09:00	04/24/12 22:57	0.96
13C-2,3,4,6,7,8-HxCDF	41		28 - 136	04/23/12 09:00	04/24/12 22:57	0.96
13C-1,2,3,7,8,9-HxCDF	44		29 - 147	04/23/12 09:00	04/24/12 22:57	0.96
13C-1,2,3,4,6,7,8-HpCDF	46		28 - 143	04/23/12 09:00	04/24/12 22:57	0.96
13C-1,2,3,4,7,8,9-HpCDF	53		26 - 138	04/23/12 09:00	04/24/12 22:57	0.96
13C-1,2,3,4,7,8-HxCDF	40		26 - 152	04/23/12 09:00	04/24/12 22:57	0.96

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	12000		50	40	ug/L		04/24/12 09:36	05/01/12 14:20	1
Arsenic	ND		10	7.0	ug/L		04/24/12 09:36	05/01/12 14:20	1
Boron	ND		0.25	0.10	mg/L		04/24/12 09:36	04/24/12 21:15	5
Beryllium	ND		10	4.5	ug/L		04/24/12 09:36	04/24/12 21:15	5
Calcium	17		0.50	0.25	mg/L		04/24/12 09:36	04/24/12 21:15	5
Chromium	16	J,DX	25	10	ug/L		04/24/12 09:36	04/24/12 21:15	5
Iron	16		0.20	0.075	mg/L		04/24/12 09:36	04/24/12 21:15	5
Magnesium	6.3		0.10	0.060	mg/L		04/24/12 09:36	04/24/12 21:15	5
Nickel	20	J,DX	50	10	ug/L		04/24/12 09:36	04/24/12 21:15	5
Vanadium	30	J,DX	50	15	ug/L		04/24/12 09:36	04/24/12 21:15	5
Zinc	64	J,DX	100	30	ug/L		04/24/12 09:36	04/24/12 21:15	5
Silver	ND		50	30	ug/L		04/24/12 09:36	04/24/12 21:15	5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	660		50	40	ug/L		04/23/12 10:11	04/24/12 13:04	1
Arsenic	ND		10	7.0	ug/L		04/23/12 10:11	05/03/12 15:09	1
Boron	0.054	MB	0.050	0.020	mg/L		04/23/12 10:11	04/24/12 13:04	1
Beryllium	ND		2.0	0.90	ug/L		04/23/12 10:11	04/24/12 13:04	1
Calcium	14		0.10	0.050	mg/L		04/23/12 10:11	04/24/12 13:04	1
Chromium	ND		5.0	2.0	ug/L		04/23/12 10:11	04/24/12 13:04	1
Iron	0.66		0.040	0.015	mg/L		04/23/12 10:11	04/24/12 13:04	1
Magnesium	2.0		0.020	0.012	mg/L		04/23/12 10:11	04/24/12 13:04	1
Nickel	2.7	J,DX	10	2.0	ug/L		04/23/12 10:11	04/24/12 13:04	1
Vanadium	ND		10	3.0	ug/L		04/23/12 10:11	04/24/12 13:04	1
Zinc	ND		20	6.0	ug/L		04/23/12 10:11	04/24/12 13:04	1
Silver	ND		10	6.0	ug/L		04/23/12 10:11	04/24/12 13:04	1

Date Received: 04/14/12 16:15

TestAmerica Job ID: 440-8620-1

Client Sample ID: Outfall 008 composite

Lab Sample ID: 440-8693-1 Date Collected: 04/13/12 18:55

Matrix: Water

Analyte	Result	rable Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Cadmium	ND		5.0		ug/L		04/23/12 17:06	04/28/12 19:14	
Copper	18		10		ug/L		04/23/12 17:06	04/28/12 19:14	į
Lead	10		5.0		ug/L		04/23/12 17:06	04/28/12 19:14	į
	ND		10		ug/L ug/L		04/23/12 17:06	04/28/12 19:14	
Antimony					•				
Selenium Fhallium	ND ND		10 5.0		ug/L ug/L		04/23/12 17:06 04/23/12 17:06	04/28/12 19:14 04/28/12 19:14	5
Method: 200 9 Metale (ICD/MC)	Discolved								
Method: 200.8 - Metals (ICP/MS) - Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	— — —	5.0	0.50	ug/L		04/23/12 20:10	04/27/12 01:01	511140
	3.6	LDV	10		ug/L		04/23/12 20:10	04/27/12 18:56	į
copper ead	ND	J,DX	5.0		ug/L ug/L		04/23/12 20:10	04/27/12 01:01	5
	ND							04/27/12 01:01	
Antimony			10		ug/L		04/23/12 20:10		5
Selenium	ND		10		ug/L		04/23/12 20:10	04/27/12 01:01	5
hallium	1.2	J,DX	5.0	1.0	ug/L		04/23/12 20:10	04/27/12 18:56	5
Method: 245.1 - Mercury (CVAA)						_			
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		04/16/12 15:03	04/17/12 12:52	1
Method: 245.1 - Mercury (CVAA) -	Dissolved								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
//lethod: SM 2340B - Total Hardne	ess (as CaCO3	b) by calculation	n						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
								- Allary 20a	Diriac
Hardness, as CaCO3	68		0.33		mg/L	— <u>-</u>		04/18/12 13:18	1
		b) by calculation	0.33	0.17		— <u>-</u>			
Method: SM 2340B - Total Hardne	ess (as CaCO3	b) by calculation	0.33 n - Dissolve RL	0.17	mg/L		Prepared		Dil Fac
Method: SM 2340B - Total Hardne Analyte	ess (as CaCO3		0.33	0.17 ed MDL	mg/L			04/18/12 13:18	1
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry	ess (as CaCO3 Result 42	Qualifier	0.33 n - Dissolve RL 0.33	0.17 ed MDL 0.17	mg/L Unit mg/L	<u>D</u>	Prepared	04/18/12 13:18 Analyzed	Dil Fac
Method: SM 2340B - Total Hardne unalyte lardness, as CaCO3 General Chemistry unalyte	Result		0.33 n - Dissolve RL 0.33	0.17 d MDL 0.17	mg/L Unit mg/L			04/18/12 13:18 Analyzed 05/01/12 14:55 Analyzed	Dil Fac
Method: SM 2340B - Total Hardne unalyte lardness, as CaCO3 General Chemistry unalyte	ess (as CaCO3 Result 42	Qualifier	0.33 n - Dissolve RL 0.33	0.17 ed MDL 0.17	mg/L Unit mg/L	<u>D</u>	Prepared	04/18/12 13:18 Analyzed 05/01/12 14:55	Dil Fac
Method: SM 2340B - Total Hardne knalyte Hardness, as CaCO3 General Chemistry knalyte Total Dissolved Solids	Result	Qualifier	0.33 n - Dissolve RL 0.33	0.17 ed MDL 0.17 MDL 10	mg/L Unit mg/L Unit	<u>D</u>	Prepared	04/18/12 13:18 Analyzed 05/01/12 14:55 Analyzed	Dil Fac
Method: SM 2340B - Total Hardne unalyte lardness, as CaCO3 General Chemistry unalyte cotal Dissolved Solids cotal Suspended Solids	Result Result 110	Qualifier	0.33 n - Dissolve RL 0.33 RL 10	0.17 MDL 10 13 3.0	mg/L Unit mg/L Unit mg/L ug/L	<u>D</u>	Prepared	04/18/12 13:18 Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Cyanide, Total	Result Result 110 200	Qualifier	0.33 n - Dissolve RL 0.33 RL 10 13	0.17 MDL 0.17 MDL 10 13	mg/L Unit mg/L Unit mg/L ug/L	<u>D</u>	Prepared	Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Cyanide, Total	Result 42 Result 110 200 ND	Qualifier	0.33 n - Dissolve RL 0.33 RL 10 13 5.0	0.17 MDL 10 13 3.0	mg/L Unit mg/L Unit mg/L mg/L mg/L ug/L mg/L	<u>D</u>	Prepared	Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19 04/26/12 21:26	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Cyanide, Total Fluoride Ammonia (as N)	Result 110 200 ND 0.10 ND	Qualifier	0.33 n - Dissolve RL 0.33 RL 10 13 5.0 0.10	0.17 ed MDL 0.17 MDL 10 13 3.0 0.020	mg/L Unit mg/L Unit mg/L mg/L mg/L ug/L mg/L	<u>D</u>	Prepared Prepared 04/26/12 18:24	Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19 04/26/12 21:26 04/18/12 06:40	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Cyanide, Total Fluoride Ammonia (as N) Method: Asbestos - EPA 100.2 As	Result 110 200 ND 0.10 ND sbestos in Dri	Qualifier	0.33 n - Dissolve RL 0.33 RL 10 13 5.0 0.10	0.17 ed MDL 0.17 MDL 10 13 3.0 0.020	mg/L Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L	<u>D</u>	Prepared Prepared 04/26/12 18:24	Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19 04/26/12 21:26 04/18/12 06:40	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Eluoride Ammonia (as N) Method: Asbestos - EPA 100.2 Astanalyte	Result 110 200 ND 0.10 ND sbestos in Dri	Qualifier Qualifier	0.33 n - Dissolve RL 0.33 RL 10 13 5.0 0.10 0.400	0.17 MDL 10 13 3.0 0.020 0.157	mg/L Unit mg/L mg/L mg/L mg/L mg/L mg/L mg/L	D	Prepared Prepared 04/26/12 18:24 04/26/12 19:26	Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19 04/26/12 21:26 04/18/12 06:40 04/26/12 21:20	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Cyanide, Total Fluoride Ammonia (as N) Method: Asbestos - EPA 100.2 Astalyte Assessors	Result 110 200 ND 0.10 ND sbestos in Dri Result <6.8	Qualifier Qualifier nking Water Qualifier ub Contract Me	0.33 n - Dissolve RL 0.33 RL 10 13 5.0 0.10 0.400 RL	0.17 MDL 10 13 3.0 0.020 0.157	mg/L Unit mg/L mg/L mg/L mg/L mg/L mg/L Unit mg/L	D	Prepared Prepared 04/26/12 18:24 04/26/12 19:26 Prepared	Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19 04/26/12 21:26 04/18/12 06:40 04/26/12 21:20 Analyzed	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Cyanide, Total Fluoride Ammonia (as N) Method: Asbestos - EPA 100.2 As Analyte ASBESTOS Method: Gamma Spec K-40 CS-13	Result 110 200 ND 0.10 ND sbestos in Dri Result <6.8 87 - General S Result	Qualifier Qualifier nking Water Qualifier ub Contract Me	0.33 n - Dissolve RL 0.33 RL 10 13 5.0 0.10 0.400 RL ethod RL	0.17 MDL 10 13 3.0 0.020 0.157	mg/L Unit mg/L mg/L mg/L ug/L mg/L mg/L MFL Unit MFL	D	Prepared 04/26/12 18:24 04/26/12 19:26 Prepared 04/17/12 00:00 Prepared	Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19 04/26/12 21:26 04/18/12 06:40 04/26/12 21:20 Analyzed	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Cyanide, Total Fluoride Ammonia (as N) Method: Asbestos - EPA 100.2 As Analyte Method: Gamma Spec K-40 CS-13 Analyte	Result 110 200 ND 0.10 ND sbestos in Dri Result <6.8	Qualifier Qualifier nking Water Qualifier ub Contract Me	0.33 n - Dissolve RL 0.33 RL 10 13 5.0 0.10 0.400 RL	0.17 MDL 10 13 3.0 0.020 0.157	mg/L Unit mg/L mg/L mg/L ug/L mg/L mg/L Mg/L MFL	D	Prepared 04/26/12 18:24 04/26/12 19:26 Prepared 04/17/12 00:00	Analyzed 05/01/12 14:55 Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19 04/26/12 21:26 04/18/12 06:40 04/26/12 21:20 Analyzed 04/23/12 00:00	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Cyanide, Total Fluoride Ammonia (as N) Method: Asbestos - EPA 100.2 Astanalyte ASBESTOS Method: Gamma Spec K-40 CS-13 Analyte Cesium-137	Result 110 200 ND 0.10 ND sbestos in Dri Result <6.8 87 - General S Result	Qualifier Qualifier Inking Water Qualifier Qualifier U Qualifier	0.33 n - Dissolve RL 0.33 RL 10 13 5.0 0.10 0.400 RL ethod RL	0.17 MDL 10 13 3.0 0.020 0.157	mg/L Unit mg/L mg/L mg/L ug/L mg/L mg/L MFL Unit MFL	D	Prepared 04/26/12 18:24 04/26/12 19:26 Prepared 04/17/12 00:00 Prepared	Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19 04/26/12 21:26 04/18/12 06:40 04/26/12 21:20 Analyzed 04/23/12 00:00 Analyzed	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Cyanide, Total Fluoride Ammonia (as N) Method: Asbestos - EPA 100.2 As Analyte ASBESTOS Method: Gamma Spec K-40 CS-13 Analyte Cesium-137 Potassium-40 Method: Gross Alpha and Beta - C	Result	Qualifier Qualifier Contract Months Qualifier Qualifier U U Seta	0.33 n - Dissolve RL 0.33 RL 10 13 5.0 0.10 0.400 RL 20 25	0.17 MDL 10 13 3.0 0.020 0.157 MDL MDL	mg/L Unit mg/L mg/L mg/L ug/L mg/L mg/L MFL Unit MFL Unit pCi/L pCi/L		Prepared O4/26/12 18:24 O4/26/12 19:26 Prepared O4/17/12 00:00 Prepared O4/26/12 00:00 04/26/12 00:00	Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19 04/26/12 21:26 04/18/12 06:40 04/26/12 21:20 Analyzed 04/23/12 00:00 Analyzed 04/26/12 00:00 04/26/12 00:00	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Cyanide, Total Fluoride Ammonia (as N) Method: Asbestos - EPA 100.2 As Analyte ASBESTOS Method: Gamma Spec K-40 CS-13 Analyte Cesium-137 Potassium-40 Method: Gross Alpha and Beta - C Analyte	Result	Qualifier Qualifier Qualifier Qualifier U Qualifier U Qualifier Qualifier Qualifier	0.33 n - Dissolve RL 0.33 RL 10 13 5.0 0.10 0.400 RL 20 25 RL	0.17 MDL 10 13 3.0 0.020 0.157	mg/L Unit mg/L mg/L mg/L ug/L mg/L mg/L toj/L mg/L toj/L coj/L Drit pCi/L pCi/L	D	Prepared O4/26/12 18:24 O4/26/12 19:26 Prepared O4/17/12 00:00 Prepared O4/26/12 00:00 O4/26/12 00:00 Prepared	Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19 04/26/12 21:26 04/18/12 06:40 04/26/12 21:20 Analyzed 04/23/12 00:00 Analyzed 04/26/12 00:00 Analyzed 04/26/12 00:00	Dil Fac
Method: SM 2340B - Total Hardne Analyte Hardness, as CaCO3 General Chemistry Analyte Total Dissolved Solids Total Suspended Solids Cyanide, Total Fluoride Ammonia (as N) Method: Asbestos - EPA 100.2 As Analyte ASBESTOS Method: Gamma Spec K-40 CS-13 Analyte Cesium-137 Potassium-40 Method: Gross Alpha and Beta - C Analyte Gross Alpha Gross Beta	Result	Qualifier Qualifier Qualifier Qualifier U Qualifier U Qualifier Qualifier Qualifier	0.33 n - Dissolve RL 0.33 RL 10 13 5.0 0.10 0.400 RL 20 25	0.17 MDL 10 13 3.0 0.020 0.157 MDL MDL	mg/L Unit mg/L mg/L mg/L ug/L mg/L mg/L MFL Unit MFL Unit pCi/L pCi/L		Prepared O4/26/12 18:24 O4/26/12 19:26 Prepared O4/17/12 00:00 Prepared O4/26/12 00:00 04/26/12 00:00	Analyzed 05/01/12 14:55 Analyzed 04/16/12 10:21 04/19/12 17:19 04/26/12 21:26 04/18/12 06:40 04/26/12 21:20 Analyzed 04/23/12 00:00 Analyzed 04/26/12 00:00 04/26/12 00:00	Dil Fac

Client Sample Results

Client: MWH Americas Inc

Uranium, Total

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Lab Sample ID: 440-8693-1

04/27/12 00:00 04/27/12 08:55

Matrix: Water

Client Sample	ID: Outfall	800	composite
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Date Collected: 04/13/12 18:55 Date Received: 04/14/12 16:15

Method: Radium 226 - Ge	neral Sub Contract Me	ethod							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-226	0.234	U	1		pCi/L		05/04/12 00:00	05/04/12 13:45	1
- Method: Radium 228 - RA	D-226-228 combined								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Radium-228	0.699	J	1		pCi/L		04/30/12 00:00	04/30/12 14:11	1
Method: Strontium 90 - G Analyte		lethod Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
				MDL		D			Dil Fac
Strontium-90	-0.049	U	2		pCi/L		04/26/12 00:00	04/26/12 12:35	'
Method: Tritium - General	Sub Contract Method	d							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	-4.64	U	500		pCi/L		04/19/12 00:00	04/19/12 20:21	1
- -									
Method: Uranium, Combi	ned - General Sub Co	ntract Method							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

pCi/L

0.642 J

Lab Chronicle

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Lab Sample ID: 440-8620-1

Matrix: Water

Client Sample ID: Outfall 008 Date Collected: 04/13/12 15:30

Date Received: 04/13/12 18:46

	Batch	Batch		Dil	Init	ial	Fin	al	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amo	unt	Amo	unt	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10	mL	10	mL	19861	04/15/12 18:06	MR	TAL IRV
Total/NA	Analysis	624		1	10	mL	10	mL	20084	04/17/12 02:31	YK	TAL IRV
Total/NA	Analysis	218.6		1	10	mL	10	mL	19543	04/13/12 22:05	SL	TAL IRV
Total/NA	Prep	1664A			1050	mL	1000	mL	22035	04/26/12 07:22	DA	TAL IRV
Total/NA	Analysis	1664A		1					22042	04/26/12 07:38	DA	TAL IRV
Total/NA	Analysis	SM 9221E		1	100	mL	100	mL	20001		AK	TAL IRV
									(Start)	04/13/12 18:57		
									(End)	04/16/12 14:15		
Total/NA	Analysis	SM 9221F		1	100	mL	100	mL	20003		AK	TAL IRV
									(Start)	04/13/12 18:57		
									(End)	04/16/12 14:15		

Client Sample ID: Trip Blank Lab Sample ID: 440-8620-2 Date Collected: 04/13/12 15:30

Date Received: 04/13/12 18:46

Matrix: Water

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	19861	04/15/12 18:35	MR	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	20084	04/17/12 02:58	YK	TAL IRV

Client Sample ID: Outfall 008 composite Lab Sample ID: 440-8693-1

Date Collected: 04/13/12 18:55 Matrix: Water

Date Received: 04/14/12 16:15

	Batch	Batch		Dil	Init	ial	Fin	al	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amo	unt	Amo	unt	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	525.2			1055	mL	1	mL	19844	04/15/12 06:21	LA	TAL IRV
Total/NA	Analysis	525.2		1					20682	04/19/12 13:37	JM	TAL IRV
Total/NA	Prep	625			1055	mL	2	mL	21041	04/20/12 14:44	LA	TAL IRV
Total/NA	Analysis	625		1					21217	04/23/12 00:56	Al	TAL IRV
Total/NA	Analysis	300.0		1	1	mL	1.0	mL	19784	04/14/12 17:49	KS	TAL IRV
Total/NA	Analysis	300.0		1	1	mL	1.0	mL	19785	04/14/12 17:49	KS	TAL IRV
Total/NA	Analysis	314.0		1	5	mL	1.0	mL	20654	04/19/12 21:23	MN	TAL IRV
Total	Prep	3542			1038.07	mL	20	uL	2114077_P	04/23/12 09:00	TL	TAL WS
Total	Analysis	1613B		0.96					2114077	04/24/12 22:57	GSV	TAL WS0
Total	Analysis	1613B		0.96					2114077	04/25/12 05:30	GSV	TAL WS0
Total/NA	Prep	245.1			20	mL	20	mL	20031	04/16/12 15:03	SN	TAL IRV
Total/NA	Analysis	245.1		1					20257	04/17/12 12:52	MP	TAL IRV
Total/NA	Analysis	SM 2340B		1					20492	04/18/12 13:18	FR	TAL IRV
Dissolved	Prep	245.1			20	mL	20	mL	20049	04/17/12 08:33	SN	TAL IRV
Dissolved	Analysis	245.1		1					20502	04/18/12 13:16	MP	TAL IRV
Dissolved	Prep	200.2			50	mL	50	mL	21302	04/23/12 10:11	EN	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1					21614	04/24/12 13:04	VS	TAL IRV
Total Recoverable	Prep	200.2			50	mL	50	mL	21521	04/24/12 09:36	EN	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		5					21778	04/24/12 21:15	DP	TAL IRV

Project/Site: Annual Outfall 008 Grab

Client Sample ID: Outfall 008 composite

Lab Sample ID: 440-8693-1 Date Collected: 04/13/12 18:55 Matrix: Water

Date Received: 04/14/12 16:15

Client: MWH Americas Inc

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Init Amo		Fin Amo		Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.2	-			mL		mL	21438	04/23/12 20:10	SC	TAL IRV
Dissolved	Analysis	200.8		5					22326	04/27/12 01:01	RC	TAL IRV
Dissolved	Analysis	200.8		5					22566	04/27/12 18:56	NH	TAL IRV
Total Recoverable	Prep	200.2			50	mL	50	mL	21402	04/23/12 17:06	SC	TAL IRV
Total Recoverable	Analysis	200.8		5					22628	04/28/12 19:14	RC	TAL IRV
Dissolved	Analysis	SM 2340B		1					23040	05/01/12 14:55	DT	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1					23052	05/01/12 14:20	TK	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1					23613	05/03/12 15:09	TK	TAL IRV
Total/NA	Analysis	SM 2540C		1	100	mL	100	mL	19957	04/16/12 10:21	XL	TAL IRV
Total/NA	Analysis	SM 4500 F C		1					20387	04/18/12 06:40	FZ	TAL IRV
Total/NA	Analysis	SM 2540D		1	80	mL	100	mL	20846	04/19/12 17:19	DK	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50	mL	50	mL	22259	04/26/12 19:26	PQI	TAL IRV
Total/NA	Analysis	SM 4500 NH3 C		1					22271	04/26/12 21:20	RW	TAL IRV
Total/NA	Prep	Distill/CN			50	mL	50	mL	22248	04/26/12 18:24	PQI	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1					22273	04/26/12 21:26	PQI	TAL IRV
Total/NA	Prep	NA		1					150453_P	04/17/12 00:00		EMS Labs
Total/NA	Analysis	Asbestos		1					150453	04/23/12 00:00	LK	EMS Labs
Total/NA	Analysis	Gamma Spec K-40 CS-137		1					8611	04/26/12 00:00	LS	Eber-Rich
Total/NA	Prep	General Prep		1					8611_P	04/26/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha and Beta		1					8611	04/30/12 08:20	DVP	Eber-Rich
Total/NA	Prep	General Prep		1					8611_P	05/04/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 226		1					8611	05/04/12 13:45	TM	Eber-Rich
Total/NA	Prep	General Prep		1					8611_P	04/30/12 00:00		Eber-Rich
Total/NA	Analysis	Radium 228		1					8611	04/30/12 14:11	ASM	Eber-Rich
Total/NA	Analysis	Strontium 90		1					8611	04/26/12 12:35	TSC	Eber-Rich
Total/NA	Prep	General Prep		1					8611_P	04/19/12 00:00		Eber-Rich
Total/NA	Analysis	Tritium		1					8611	04/19/12 20:21	WL	Eber-Rich
Total/NA	Prep	General Prep		1					8611_P	04/27/12 00:00		Eber-Rich
Total/NA	Analysis	Uranium, Combined		1					8611	04/27/12 08:55	LS	Eber-Rich

Laboratory References:

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

EMS Labs = EMS Laboratories Pasadena, CA, 117 West Bellevue Drive, Pasadena, CA 91105-2503

EMSL = EMSL Analytical, Inc., 200 Rt 130 North, Cinnaminson, NJ 08077, TEL (800)220-3675

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

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

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

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

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

Lab Sample ID: MB 440-19861/4

Matrix: Water

Analysis Batch: 19861

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

мв мв Result Qualifier RL MDL Unit Dil Fac Analyte D Prepared Analyzed 2-Chloroethyl vinyl ether ND 2.0 1.8 ug/L 04/15/12 14:54 ND 5.0 04/15/12 14:54 Acrolein 4.0 ug/L ND 2.0 04/15/12 14:54 Acrylonitrile 1.2 ug/L

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		80 - 120		04/15/12 14:54	1
Dibromofluoromethane (Surr)	104		80 - 120		04/15/12 14:54	1

Lab Sample ID: LCS 440-19861/5 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Matrix: Water

Analysis Batch: 19861

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
2-Chloroethyl vinyl ether	25.0	24.8		ug/L		99	25 - 170	

LCS LCS %Recovery Qualifier Surrogate Limits Toluene-d8 (Surr) 106 80 - 120 Dibromofluoromethane (Surr) 106 80 - 120

Lab Sample ID: LCS 440-19861/6

Matrix: Water

Analysis Batch: 19861

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acrylonitrile	25.0	22.7		ua/L	_	91	40 - 160	

LCS LCS %Recovery Qualifier Limits Surrogate Toluene-d8 (Surr) 104 80 - 120 103 80 - 120 Dibromofluoromethane (Surr)

Analysis Batch: 19861

Lab Sample ID: 440-7721-A-1 MS	Client Sample ID: Matrix Spike
Matrix: Water	Prep Type: Total/NA

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
2-Chloroethyl vinyl ether	ND		25.0	ND	LN	ug/L		0	25 - 170	

MS MS Surrogate %Recovery Qualifier Limits Toluene-d8 (Surr) 106 80 - 120 103 80 - 120 Dibromofluoromethane (Surr)

Lab Sample ID: 440-7721-A-1 MSD

Matrix: Water

Analysis Batch: 19861

Allalysis Datcil. 13001											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
2-Chloroethyl vinyl ether	ND		25.0	ND	AY	ug/L		0	25 - 170	NC	25

iit 5

Prep Type: Total/NA

Client Sample ID: Matrix Spike Duplicate

QC Sample Results

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Lab Sample ID: 440-7721-A-1 MSD

Matrix: Water

Analysis Batch: 19861

MSD MSD

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

Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120

Client Sample ID: Method Blank

Prep Type: Total/NA

Matrix: Water

Analysis Batch: 20084

Lab Sample ID: MB 440-20084/4

MB	MB
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	MB	MB MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			04/16/12 21:06	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.30	ug/L			04/16/12 21:06	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			04/16/12 21:06	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			04/16/12 21:06	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			04/16/12 21:06	1
1,2-Dichlorobenzene	ND		0.50	0.32	ug/L			04/16/12 21:06	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			04/16/12 21:06	1
1,2-Dichloropropane	ND		0.50	0.35	ug/L			04/16/12 21:06	1
1,3-Dichlorobenzene	ND		0.50	0.35	ug/L			04/16/12 21:06	1
1,2,3-Trichloropropane	ND		0.50	0.40	ug/L			04/16/12 21:06	1
1,4-Dichlorobenzene	ND		0.50	0.37	ug/L			04/16/12 21:06	1
Benzene	ND		0.50	0.28	ug/L			04/16/12 21:06	1
Bromoform	ND		0.50	0.40	ug/L			04/16/12 21:06	1
Bromomethane	ND		0.50	0.42	ug/L			04/16/12 21:06	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			04/16/12 21:06	1
Chlorobenzene	ND		0.50	0.36	ug/L			04/16/12 21:06	1
Dibromochloromethane	ND		0.50	0.40	ug/L			04/16/12 21:06	1
Chloroethane	ND		0.50	0.40	ug/L			04/16/12 21:06	1
Chloroform	ND		0.50	0.33	ug/L			04/16/12 21:06	1
Chloromethane	ND		0.50	0.40	ug/L			04/16/12 21:06	1
cis-1,3-Dichloropropene	ND		0.50	0.22	ug/L			04/16/12 21:06	1
Bromodichloromethane	ND		0.50	0.30	ug/L			04/16/12 21:06	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/16/12 21:06	1
Methylene Chloride	ND		1.0	0.95	ug/L			04/16/12 21:06	1
Tetrachloroethene	ND		0.50	0.32	ug/L			04/16/12 21:06	1
Toluene	ND		0.50	0.36	ug/L			04/16/12 21:06	1
trans-1,2-Dichloroethene	ND		0.50	0.30	ug/L			04/16/12 21:06	1
tert-Butanol	ND		10	6.5	ug/L			04/16/12 21:06	1
trans-1,3-Dichloropropene	ND		0.50	0.32	ug/L			04/16/12 21:06	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			04/16/12 21:06	1
Vinyl chloride	ND		0.50	0.40	ug/L			04/16/12 21:06	1
Trichloroethene	ND		0.50	0.26	ug/L			04/16/12 21:06	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			04/16/12 21:06	1
1,2-Dibromoethane (EDB)	ND		0.50	0.40	ug/L			04/16/12 21:06	1
Diisopropyl ether	ND		0.50	0.25	ug/L			04/16/12 21:06	1
Methyl tert-butyl ether	ND		0.50	0.32	ug/L			04/16/12 21:06	1
Naphthalene	ND		0.50	0.41	ug/L			04/16/12 21:06	1
Tert-amyl methyl ether	ND		0.50	0.33	ug/L			04/16/12 21:06	1
Ethyl tert-butyl ether	ND		0.50	0.28	ug/L			04/16/12 21:06	1
Xylenes, Total	ND		1.0	0.90	ug/L			04/16/12 21:06	1

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QC Sample Results

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

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

Lab Sample ID: MB 440-20084/4

Lab Sample ID: LCS 440-20084/5

Matrix: Water

Analysis Batch: 20084

Client Sample ID: Method Blank

Prep Type: Total/NA

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		80 - 120		04/16/12 21:06	1
Dibromofluoromethane (Surr)	90		80 - 120		04/16/12 21:06	1
Toluene-d8 (Surr)	104		80 - 120		04/16/12 21:06	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Ana	lysis	Batch:	20084

Matrix: Water

Analysis Baton, 20004	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	25.0	24.8		ug/L		99	65 - 135	
1,1,2,2-Tetrachloroethane	25.0	27.7		ug/L		111	55 - 130	
1,1,2-Trichloroethane	25.0	24.6		ug/L		98	70 ₋ 125	
1,1-Dichloroethane	25.0	24.2		ug/L		97	70 - 125	
1,1-Dichloroethene	25.0	23.8		ug/L		95	70 ₋ 125	
1,2-Dichlorobenzene	25.0	27.0		ug/L		108	75 ₋ 120	
1,2-Dichloroethane	25.0	25.5		ug/L		102	60 - 140	
1,2-Dichloropropane	25.0	25.0		ug/L		100	70 ₋ 125	
1,3-Dichlorobenzene	25.0	27.3		ug/L		109	75 - 120	
1,2,3-Trichloropropane	25.0	25.5		ug/L		102	60 _ 130	
1,4-Dichlorobenzene	25.0	25.6		ug/L		102	75 ₋ 120	
Benzene	25.0	22.9		ug/L		92	70 - 120	
Bromoform	25.0	20.3		ug/L		81	55 ₋ 130	
Bromomethane	25.0	29.0		ug/L		116	65 - 140	
Carbon tetrachloride	25.0	27.8		ug/L		111	65 _ 140	
Chlorobenzene	25.0	22.3		ug/L		89	75 - 120	
Dibromochloromethane	25.0	26.9		ug/L		108	70 - 140	
Chloroethane	25.0	24.2		ug/L		97	60 - 140	
Chloroform	25.0	23.8		ug/L		95	70 - 130	
Chloromethane	25.0	28.2		ug/L		113	50 - 140	
cis-1,3-Dichloropropene	25.0	24.3		ug/L		97	75 ₋ 125	
Bromodichloromethane	25.0	25.6		ug/L		102	70 - 135	
Ethylbenzene	25.0	21.1		ug/L		84	75 ₋ 125	
Methylene Chloride	25.0	21.5		ug/L		86	55 - 130	
Tetrachloroethene	25.0	25.0		ug/L		100	70 ₋ 125	
Toluene	25.0	22.3		ug/L		89	70 - 120	
trans-1,2-Dichloroethene	25.0	25.4		ug/L		102	70 - 125	
tert-Butanol	125	131		ug/L		105	70 - 135	
trans-1,3-Dichloropropene	25.0	25.7		ug/L		103	70 - 125	
Trichlorofluoromethane	25.0	25.8		ug/L		103	65 - 145	
Vinyl chloride	25.0	27.8		ug/L		111	55 - 135	
Trichloroethene	25.0	27.1		ug/L		108	70 - 125	
cis-1,2-Dichloroethene	25.0	25.8		ug/L		103	70 - 125	
1,2-Dibromoethane (EDB)	25.0	24.9		ug/L		100	75 ₋ 125	
Diisopropyl ether	25.0	24.6		ug/L		98	60 - 135	
Methyl tert-butyl ether	25.0	22.7		ug/L		91	60 - 135	
Naphthalene	25.0	27.1		ug/L		108	55 _ 135	
Tert-amyl methyl ether	25.0	21.8		ug/L		87	60 _ 135	
Ethyl tert-butyl ether	25.0	22.2		ug/L		89	65 - 135	
Xylenes, Total	75.0	66.8		ug/L		89	70 ₋ 125	

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

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

Lab Sample ID: LCS 440-20084/5

Matrix: Water

Analysis Batch: 20084

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

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	102		80 - 120

Lab Sample ID: 440-8626-A-3 MS

Matrix: Water

Analysis Batch: 20084

Client Sample ID: Matrix Spike

Prep Type: Total/NA

%Rec.

Alialysis Batch. 20004	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1-Trichloroethane	ND		25.0	26.1		ug/L		104	65 - 140	
1,1,2,2-Tetrachloroethane	ND		25.0	28.6		ug/L		114	55 - 135	
1,1,2-Trichloroethane	ND		25.0	26.5		ug/L		106	65 - 130	
1,1-Dichloroethane	ND		25.0	25.3		ug/L		101	65 - 130	
1,1-Dichloroethene	16		25.0	41.5		ug/L		104	60 - 130	
1,2-Dichlorobenzene	ND		25.0	27.8		ug/L		111	75 ₋ 125	
1,2-Dichloroethane	0.61		25.0	28.9		ug/L		113	60 - 140	
1,2-Dichloropropane	ND		25.0	27.1		ug/L		108	65 _ 130	
1,3-Dichlorobenzene	ND		25.0	27.6		ug/L		110	75 - 125	
1,2,3-Trichloropropane	ND		25.0	25.9		ug/L		104	55 ₋ 135	
1,4-Dichlorobenzene	ND		25.0	26.7		ug/L		107	75 ₋ 125	
Benzene	ND		25.0	24.3		ug/L		97	65 _ 125	
Bromoform	ND		25.0	20.5		ug/L		82	55 ₋ 135	
Bromomethane	ND		25.0	30.0		ug/L		120	55 - 145	
Carbon tetrachloride	0.30	J,DX	25.0	30.3		ug/L		120	65 _ 140	
Chlorobenzene	ND		25.0	23.2		ug/L		93	75 - 125	
Dibromochloromethane	ND		25.0	27.7		ug/L		111	65 - 140	
Chloroethane	ND		25.0	24.7		ug/L		99	55 ₋ 140	
Chloroform	0.99		25.0	26.2		ug/L		101	65 - 135	
Chloromethane	ND		25.0	27.9		ug/L		112	45 - 145	
cis-1,3-Dichloropropene	ND		25.0	25.5		ug/L		102	70 _ 130	
Bromodichloromethane	ND		25.0	27.4		ug/L		110	70 ₋ 135	
Ethylbenzene	ND		25.0	21.1		ug/L		84	65 _ 130	
Methylene Chloride	ND		25.0	22.7		ug/L		91	50 - 135	
Tetrachloroethene	0.33	J,DX	25.0	27.0		ug/L		107	65 _ 130	
Toluene	ND		25.0	23.7		ug/L		95	70 _ 125	
trans-1,2-Dichloroethene	ND		25.0	25.9		ug/L		104	65 _ 130	
tert-Butanol	ND		125	143		ug/L		114	65 _ 140	
trans-1,3-Dichloropropene	ND		25.0	27.7		ug/L		111	65 - 135	
Trichlorofluoromethane	ND		25.0	27.1		ug/L		108	60 ₋ 145	
Vinyl chloride	ND		25.0	28.0		ug/L		112	45 - 140	
Trichloroethene	29		25.0	56.2		ug/L		111	65 _ 125	
cis-1,2-Dichloroethene	ND		25.0	26.5		ug/L		106	65 _ 130	
1,2-Dibromoethane (EDB)	ND		25.0	26.5		ug/L		106	70 _ 130	
Diisopropyl ether	ND		25.0	25.6		ug/L		102	60 _ 140	
Methyl tert-butyl ether	ND		25.0	24.0		ug/L		96	55 ₋ 145	
Naphthalene	ND		25.0	27.5		ug/L		110	50 - 140	
Tert-amyl methyl ether	ND		25.0	22.0		ug/L		88	60 _ 140	
Ethyl tert-butyl ether	ND		25.0	23.7		ug/L		95	60 - 135	
Xylenes, Total	ND		75.0	67.9		ug/L		91	60 - 130	

QC Sample Results

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

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

Lab Sample ID: 440-8626-A-3 MS

Matrix: Water

Analysis Batch: 20084

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

MS MS

0.61

ND

ND

ND

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	105		80 - 120

Lab Sample ID: 440-8626-A-3 MSD

Matrix: Water

1,2-Dichloroethane

1,2-Dichloropropane

1,3-Dichlorobenzene

Chlorobenzene

Analysis Batch: 20084

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

75 - 125

	9
RPD	

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Sample Sample Spike MSD MSD %Rec. Qualifier Qualifier Limits Analyte Result Added Result Unit D %Rec RPD Limit 1,1,1-Trichloroethane ND 25.0 24.9 ug/L 100 65 - 140 4.71 20 1,1,2,2-Tetrachloroethane ND 25.0 28.3 ug/L 113 55 - 135 1.05 30 1,1,2-Trichloroethane ND 25.0 24.0 ug/L 96 65 - 130 9.90 25 1 1-Dichloroethane ND 25.0 24 8 ug/L 99 65 - 130 2 00 20 1,1-Dichloroethene 16 25.0 39.5 ug/L 96 60 - 130 4.94 20 1,2-Dichlorobenzene ND 25.0

27.1 ug/L 108 75 - 125 2.55 20 60 - 140 26.7 ug/L 104 7.91 20 25.1 ug/L 100 65 - 130 7.66 20 27.1 ug/L 108 75 - 125 1.83 20 103 30

1,2,3-Trichloropropane ND 25.0 25.7 ug/L 55 - 135 1.00 1,4-Dichlorobenzene NΠ 25.0 25.7 103 75 - 125 3.82 ug/L ND 91 65 - 125 Benzene 25.0 22.8 ug/L 6.37 ug/L 86 Bromoform ND 25.0 216 55 - 135 5 23 Bromomethane ND 25.0 28.2 ug/L 113 55 - 145 6.19 Carbon tetrachloride 0.30 J,DX 25.0 28.2 ug/L 112 65 - 1407.18

23.7

ug/L

25.0

25.0

25.0

25.0

Dibromochloromethane ND 25.0 28.3 ug/L 113 65 - 140 2 14 Chloroethane ND 25.0 23.4 ug/L 94 55 - 140 5.41 Chloroform 0.99 25.0 24.4 94 65 - 135 7.11 ug/L 25.0 26.8 Chloromethane ND ug/L 107 45 - 145 4.02 cis-1,3-Dichloropropene ND 25.0 24.3 ug/L 97 70 - 130 4.82 ND 25.0 70 - 135 Bromodichloromethane 25.9 ug/L 104 5.63

ND 25.0 65 - 130 Ethylbenzene 21.8 ug/L 87 3.26 Methylene Chloride NΠ 25.0 21.5 ug/L 86 50 - 135 5 43 Tetrachloroethene 0.33 25.0 27.5 ug/L 109 65 - 130 1.83 Toluene NΠ 25.0 22 0 88 70 - 125 7 44 ug/L trans-1,2-Dichloroethene ND 25.0 24.4 ug/L 98 65 - 130 5.96 ND 125 137 ug/L 4.36 tert-Butanol 110 65 - 140

trans-1,3-Dichloropropene ND 25.0 25.4 102 65 - 135 8.66 ug/L ug/L Trichlorofluoromethane ND 25.0 25.4 102 60 - 145 6.48 Vinyl chloride ND 25.0 27.0 ug/L 108 45 - 140 3.64 ug/L Trichloroethene 29 25.0 53.3 99 65 - 125 5.30 ND 25.0 25.6 102 65 - 130 cis-1,2-Dichloroethene ug/L 3.45

1,2-Dibromoethane (EDB) ND 25.0 26.4 ug/L 106 70 - 130 0.000 ND 25.0 97 60 - 140 5.21 Diisopropyl ether 24.3 ug/L ND 25.0 23.1 92 55 - 145 3.82 Methyl tert-butyl ether ug/L 50 - 140 ND 25.0 102 7 94 Naphthalene 25 4 ug/L

Tert-amyl methyl ether ND 25.0 21.7 ug/L 87 60 - 140 1.37 Ethyl tert-butyl ether NΠ 25.0 22.3 ug/L 89 60 - 135 6.09 Xylenes, Total ND 75.0 69.3 ug/L 92 60 - 130 2.04 Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

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

Lab Sample ID: 440-8626-A-3 MSD

Matrix: Water

Analysis Batch: 20084

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

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	103		80 - 120

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

Lab Sample ID: MB 440-19844/1-A

Matrix: Water

Analysis Batch: 20682

MB MB

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 19844

RL MDL Unit D Dil Fac Analyte Result Qualifier Prepared Analyzed ND 1.0 0.080 ug/L 04/15/12 06:18 04/19/12 09:02 Chlorpyrifos 0.25 04/19/12 09:02 Diazinon ND 0.040 ug/L 04/15/12 06:18

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1,3-Dimethyl-2-nitrobenzene 93 70 - 130 04/15/12 06:18 04/19/12 09:02 Perylene-d12 93 70 - 130 04/15/12 06:18 04/19/12 09:02 Triphenylphosphate 107 70 - 130 04/15/12 06:18 04/19/12 09:02

Lab Sample ID: LCS 440-19844/2-A

Matrix: Water

Analysis Batch: 20682

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 19844

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits 5.00 Chlorpyrifos 5.47 ug/L 109 70 - 130 Diazinon 5.00 4.57 ug/L 91 70 - 130

 Surrogate
 %Recovery
 Qualifier
 Limits

 1,3-Dimethyl-2-nitrobenzene
 96
 70 - 130

 Perylene-d12
 103
 70 - 130

 Triphenylphosphate
 102
 70 - 130

Lab Sample ID: LCSD 440-19844/3-A

Matrix: Water

Analysis Batch: 20682

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 19844

LCSD LCSD Spike %Rec. RPD Analyte Added Result Qualifier Unit %Rec Limits Limit Chlorpyrifos 5.00 5.89 ug/L 118 70 - 130 30 Diazinon 5.00 4.91 ug/L 98 70 - 130 30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,3-Dimethyl-2-nitrobenzene	101		70 - 130
Perylene-d12	99		70 - 130
Triphenylphosphate	107		70 - 130

QC Sample Results

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

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

Lab Sample ID: MB 440-21041/1-A

Matrix: Water

Analysis Batch: 21217

Client Sample ID: Method Blank

Prep Type: Total/NA
Prep Batch: 21041

Analyte	MB Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzod	Dil Fac
Acenaphthene	ND	— —	0.500	0.200	ug/L		04/20/12 14:44	Analyzed 04/22/12 17:08	DII FAC
Acenaphthylene	ND ND		0.500	0.200	ug/L ug/L		04/20/12 14:44	04/22/12 17:08	1
Aniline	ND		10.0		_		04/20/12 14:44	04/22/12 17:08	1
Anthracene	ND ND		0.500		ug/L		04/20/12 14:44	04/22/12 17:08	
					ug/L				1
Benzidine	ND		5.00	1.00	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzo[a]anthracene	ND		5.00		ug/L		04/20/12 14:44	04/22/12 17:08	
Benzo[b]fluoranthene	ND		2.00		ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzo[k]fluoranthene	ND		0.500	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzoic acid	ND		20.0	3.00	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzo[a]pyrene	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Bis(2-chloroethoxy)methane	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Bis(2-chloroethyl)ether	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	
Bis(2-ethylhexyl) phthalate	ND		5.00	1.70	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Bromophenyl phenyl ether	ND		1.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Butyl benzyl phthalate	ND		5.00	0.700	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Chloro-3-methylphenol	ND		2.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Chloronaphthalene	ND		0.500		ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Chlorophenol	ND		1.00		ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Chlorophenyl phenyl ether	ND		0.500	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Chrysene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Dibenz(a,h)anthracene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Di-n-butyl phthalate	ND		2.00	0.300	ug/L		04/20/12 14:44	04/22/12 17:08	1
1,2-Dichlorobenzene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
1,3-Dichlorobenzene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
1,4-Dichlorobenzene	ND		0.500	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
3,3'-Dichlorobenzidine	ND		5.00	0.500	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,4-Dichlorophenol	ND		2.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Diethyl phthalate	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,4-Dimethylphenol	ND		2.00	0.300	ug/L		04/20/12 14:44	04/22/12 17:08	1
Dimethyl phthalate	ND		0.500	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
4,6-Dinitro-2-methylphenol	ND		5.00	0.300	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,4-Dinitrophenol	ND		5.00	0.900	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,4-Dinitrotoluene	ND		5.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,6-Dinitrotoluene	ND		5.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Di-n-octyl phthalate	ND		5.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
1,2-Diphenylhydrazine(as	ND		1.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Azobenzene)									
Fluoranthene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Fluorene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Hexachlorobenzene	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Hexachlorobutadiene	ND		2.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Hexachloroethane	ND		3.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Hexachlorocyclopentadiene	ND		5.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Indeno[1,2,3-cd]pyrene	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Isophorone	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Methylphenol	ND		5.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
Naphthalene	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Nitrobenzene	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Nitrophenol	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Nitrophenol	ND		5.00	2 50	ug/L		04/20/12 14:44	04/22/12 17:08	1

Client: MWH Americas Inc Project/Site: Annual Outfall 008 Grab

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

Lab Sample ID: MB 440-21041/1-A **Matrix: Water**

Analysis Batch: 21217

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

Prep Batch: 21041

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	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodimethylamine	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
N-Nitrosodiphenylamine	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
N-Nitrosodi-n-propylamine	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Pentachlorophenol	ND		2.00	0.400	ug/L		04/20/12 14:44	04/22/12 17:08	1
Phenanthrene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Phenol	ND		1.00	0.300	ug/L		04/20/12 14:44	04/22/12 17:08	1
Pyrene	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
1,2,4-Trichlorobenzene	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
2,4,6-Trichlorophenol	ND		1.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Methylphenol	ND		2.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Chloroaniline	ND		2.00	0.300	ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Methylnaphthalene	ND		1.00	0.200	ug/L		04/20/12 14:44	04/22/12 17:08	1
2-Nitroaniline	ND		5.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
3-Nitroaniline	ND		5.00	1.00	ug/L		04/20/12 14:44	04/22/12 17:08	1
Dibenzofuran	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
4-Nitroaniline	ND		5.00	0.500	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzo[g,h,i]perylene	ND		5.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
Benzyl alcohol	ND		5.00	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1
bis (2-chloroisopropyl) ether	ND		0.500	0.100	ug/L		04/20/12 14:44	04/22/12 17:08	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	90		50 - 120	04/20/12 14:44	04/22/12 17:08	1
2-Fluorophenol	75		30 - 120	04/20/12 14:44	04/22/12 17:08	1
2,4,6-Tribromophenol	118		40 - 120	04/20/12 14:44	04/22/12 17:08	1
Nitrobenzene-d5	90		45 - 120	04/20/12 14:44	04/22/12 17:08	1
Terphenyl-d14	101		50 - 125	04/20/12 14:44	04/22/12 17:08	1
Phenol-d6	89		35 - 120	04/20/12 14:44	04/22/12 17:08	1

Lab Sample ID: LCS 440-21041/2-A

Matrix: Water

Analysis Batch: 21217

Client Sample ID: Lab Control Sample Prep Type: Total/NA Prep Batch: 21041

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Acenaphthene	10.0	9.040		ug/L		90	60 - 120	
Acenaphthylene	10.0	10.94		ug/L		109	60 - 120	
Aniline	10.0	9.260	J,DX	ug/L		93	35 - 120	
Anthracene	10.0	10.18		ug/L		102	65 _ 120	
Benzidine	10.0	3.160	J,DX	ug/L		32	30 - 160	
Benzo[a]anthracene	10.0	10.68		ug/L		107	65 - 120	
Benzo[b]fluoranthene	10.0	10.54		ug/L		105	55 - 125	
Benzo[k]fluoranthene	10.0	9.740		ug/L		97	50 - 125	
Benzoic acid	10.0	10.56	J,DX	ug/L		106	25 - 120	
Benzo[a]pyrene	10.0	10.32		ug/L		103	55 - 130	
Bis(2-chloroethoxy)methane	10.0	9.460		ug/L		95	55 - 120	
Bis(2-chloroethyl)ether	10.0	8.320		ug/L		83	50 - 120	
Bis(2-ethylhexyl) phthalate	10.0	11.26		ug/L		113	65 _ 130	
4-Bromophenyl phenyl ether	10.0	8.840		ug/L		88	60 - 120	
Butyl benzyl phthalate	10.0	11.64		ug/L		116	55 - 130	
4-Chloro-3-methylphenol	10.0	10.76		ug/L		108	60 - 120	

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Client: MWH Americas Inc Project/Site: Annual Outfall 008 Grab

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

Lab Sample ID: LCS 440-21041/2-A

Matrix: Water Analysis Batch: 21217 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA Prep Batch: 21041

•	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
2-Chloronaphthalene	10.0	9.280		ug/L		93	60 - 120
2-Chlorophenol	10.0	8.400		ug/L		84	45 - 120
4-Chlorophenyl phenyl ether	10.0	8.820		ug/L		88	65 - 120
Chrysene	10.0	9.500		ug/L		95	65 - 120
Dibenz(a,h)anthracene	10.0	9.100		ug/L		91	50 - 135
Di-n-butyl phthalate	10.0	12.00		ug/L		120	60 - 125
1,2-Dichlorobenzene	10.0	6.960		ug/L		70	40 - 120
1,3-Dichlorobenzene	10.0	6.600		ug/L		66	35 _ 120
1,4-Dichlorobenzene	10.0	6.720		ug/L		67	35 - 120
3,3'-Dichlorobenzidine	10.0	8.180		ug/L		82	45 ₋ 135
2,4-Dichlorophenol	10.0	9.140		ug/L		91	55 ₋ 120
Diethyl phthalate	10.0	10.18		ug/L		102	55 - 120
2,4-Dimethylphenol	10.0	7.600		ug/L		76	40 - 120
Dimethyl phthalate	10.0	9.560		ug/L		96	30 - 120
4,6-Dinitro-2-methylphenol	10.0	11.62		ug/L		116	45 - 120
2,4-Dinitrophenol	10.0	7.500		ug/L		75	40 - 120
2,4-Dinitrotoluene	10.0	9.900		ug/L		99	65 ₋ 120
2,6-Dinitrotoluene	10.0	9.340		ug/L		93	65 - 120
Di-n-octyl phthalate	10.0	11.86		ug/L		119	65 - 135
1,2-Diphenylhydrazine(as	10.0	10.58		ug/L		106	60 - 120
Azobenzene)	.0.0			ug		.00	00 - 120
Fluoranthene	10.0	10.68		ug/L		107	60 - 120
Fluorene	10.0	9.260		ug/L		93	65 - 120
Hexachlorobenzene	10.0	8.980		ug/L		90	60 - 120
Hexachlorobutadiene	10.0	5.960		ug/L		60	40 - 120
Hexachloroethane	10.0	6.360		ug/L		64	35 - 120
Hexachlorocyclopentadiene	10.0	4.580	J,DX	ug/L		46	25 - 120
Indeno[1,2,3-cd]pyrene	10.0	9.820		ug/L		98	45 - 135
Isophorone	10.0	10.48		ug/L		105	50 ₋ 120
4-Methylphenol	10.0	9.760		ug/L		98	50 ₋ 120
Naphthalene	10.0	8.000		ug/L		80	55 - 120
Nitrobenzene	10.0	9.200		ug/L		92	55 ₋ 120
2-Nitrophenol	10.0	9.040		ug/L		90	50 ₋ 120
4-Nitrophenol	10.0	13.82	LQ	ug/L		138	45 - 120
N-Nitrosodimethylamine	10.0	8.320		ug/L		83	45 - 120
N-Nitrosodiphenylamine	10.0	9.180		ug/L		92	60 - 120
N-Nitrosodi-n-propylamine	10.0	10.98		ug/L		110	45 - 120
Pentachlorophenol	10.0	9.320		ug/L		93	24 - 121
Phenanthrene	10.0	9.640		ug/L		96	65 - 120
Phenol	10.0	8.940		ug/L		89	40 - 120
Pyrene	10.0	10.26		ug/L		103	55 - 125
1,2,4-Trichlorobenzene	10.0	6.940		ug/L		69	45 ₋ 120
2,4,6-Trichlorophenol	10.0	10.26		ug/L		103	55 - 120
2-Methylphenol	10.0	8.560				86	50 ₋ 120
4-Chloroaniline	10.0	9.520		ug/L ug/L		95	55 ₋ 120
						95	55 ₋ 120
2-Methylnaphthalene	10.0	9.160		ug/L			
2-Nitroaniline 3 Nitroaniline	10.0	11.72		ug/L		117	65 ₋ 120
3-Nitroaniline	10.0	9.560		ug/L		96	60 - 120
Dibenzofuran	10.0	9.360		ug/L		94	65 - 120
4-Nitroaniline	10.0	10.04		ug/L		100	55 - 125

Client: MWH Americas Inc Project/Site: Annual Outfall 008 Grab

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

Lab Sample ID: LCS 440-21041/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA **Analysis Batch: 21217** Prep Batch: 21041 LCS LCS Snika

	Орікс		200			/ortec.	
Analyte	Added	Result	Qualifier l	Unit [D %Rec	Limits	
Benzo[g,h,i]perylene	10.0	9.260	i	ug/L	93	45 - 135	
Benzyl alcohol	10.0	9.860	l	ug/L	99	50 - 120	
bis (2-chloroisopropyl) ether	10.0	9.200	ι	ug/L	92	45 - 120	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	97		50 - 120
2-Fluorophenol	74		30 - 120
2,4,6-Tribromophenol	105		40 - 120
Nitrobenzene-d5	96		45 - 120
Terphenyl-d14	105		50 - 125
Phenol-d6	89		35 - 120

Lab Sample ID: 440-8891-A-1-A MS

Matrix: Water

Chefft Sample IL	J. Matrix Spike
Prep ⁻	Type: Total/NA

Analysis Batch: 21217									Prep Batch: 21	1041
	-	Sample	Spike		MS				%Rec.	
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	
Acenaphthene	ND		9.48	8.569		ug/L		90	60 - 120	
Acenaphthylene	ND		9.48	9.858		ug/L		104	60 - 120	
Aniline	ND		9.48	5.516	J,DX	ug/L		58	35 - 120	
Anthracene	ND		9.48	8.948		ug/L		94	65 - 120	
Benzidine	ND		9.48	ND	LN	ug/L		0	30 - 160	
Benzo[a]anthracene	ND		9.48	9.100	J,DX	ug/L		96	65 - 120	
Benzo[b]fluoranthene	ND		9.48	9.327		ug/L		98	55 - 125	
Benzo[k]fluoranthene	ND		9.48	8.038		ug/L		85	55 - 125	
Benzoic acid	ND		9.48	19.56	J,DX	ug/L		NC	25 - 125	
Benzo[a]pyrene	ND		9.48	8.872		ug/L		94	55 - 130	
Bis(2-chloroethoxy)methane	ND		9.48	8.493		ug/L		90	50 - 120	
Bis(2-chloroethyl)ether	ND		9.48	7.886		ug/L		83	50 - 120	
Bis(2-ethylhexyl) phthalate	ND		9.48	13.50	J,DX AY	ug/L		142	65 - 130	
4-Bromophenyl phenyl ether	ND		9.48	8.493		ug/L		90	60 - 120	
Butyl benzyl phthalate	ND		9.48	11.00	J,DX	ug/L		116	55 ₋ 130	
4-Chloro-3-methylphenol	ND		9.48	11.60	AY	ug/L		122	60 - 120	
2-Chloronaphthalene	ND		9.48	8.493		ug/L		90	60 - 120	
2-Chlorophenol	ND		9.48	8.417		ug/L		89	45 - 120	
4-Chlorophenyl phenyl ether	ND		9.48	7.735		ug/L		82	65 - 120	
Chrysene	ND		9.48	8.190		ug/L		86	65 - 120	
Dibenz(a,h)anthracene	ND		9.48	10.46		ug/L		110	45 - 135	
Di-n-butyl phthalate	ND		9.48	11.98	AY	ug/L		126	60 - 125	
1,2-Dichlorobenzene	ND		9.48	6.969		ug/L		74	40 - 120	
1,3-Dichlorobenzene	ND		9.48	6.447		ug/L		68	35 - 120	
1,4-Dichlorobenzene	ND		9.48	6.413		ug/L		68	35 - 120	
3,3'-Dichlorobenzidine	ND		9.48	ND	LN	ug/L		0	45 - 135	
2,4-Dichlorophenol	ND		9.48	8.948		ug/L		94	55 ₋ 120	
Diethyl phthalate	ND		9.48	8.720		ug/L		92	55 ₋ 120	
2,4-Dimethylphenol	ND		9.48	8.948		ug/L		94	40 - 120	
Dimethyl phthalate	ND		9.48	8.948		ug/L		94	30 - 120	
4,6-Dinitro-2-methylphenol	ND		9.48	8.341	J,DX	ug/L		88	45 - 120	
2,4-Dinitrophenol	ND		9.48		J,DX LN	ug/L		39	40 - 120	

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

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

Sample Sample

ND

ND

ND

ND

ND

ND

Lab Sample ID: 440-8891-A-1-A MS

Matrix: Water

Hexachloroethane

Isophorone

4-Methylphenol

Naphthalene

Nitrobenzene

2-Nitrophenol

4-Nitrophenol

Hexachlorocyclopentadiene

Indeno[1,2,3-cd]pyrene

N-Nitrosodimethylamine

N-Nitrosodiphenylamine

N-Nitrosodi-n-propylamine

Analysis Batch: 21217

Client Sample ID: Matrix Spike Prep Type: Total/NA Prep Batch: 21041

45 - 120

103

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
2,4-Dinitrotoluene	ND		9.48	8.114	J,DX	ug/L		86	65 - 120	
2,6-Dinitrotoluene	ND		9.48	8.872	J,DX	ug/L		94	65 - 120	
Di-n-octyl phthalate	ND		9.48	18.96	J,DX AY	ug/L		200	65 _ 135	
1,2-Diphenylhydrazine(as	ND		9.48	10.16		ug/L		107	60 - 120	
Azobenzene)										
Fluoranthene	ND		9.48	10.16		ug/L		107	60 - 120	
Fluorene	ND		9.48	8.569		ug/L		90	65 - 120	
Hexachlorobenzene	ND		9.48	9.100		ug/L		96	60 - 120	
Hexachlorobutadiene	ND		9.48	5.938	J,DX	ug/L		63	40 - 120	

Spike

40 - 120 9.48 5.938 J.DX ug/L 63 9.48 65 35 - 120 6.132 J,DX ug/L 9.48 2.630 J,DX ug/L 28 25 - 120 40 - 135 9 48 10.62 ug/L 112 9.48 11.68 AY ug/L 123 50 - 120 9.48 99 50 - 120 9.403 J,DX ug/L

ug/L

ND 9.48 7.886 ug/L 83 55 - 120 ND 9.48 10.09 ug/L 106 55 - 120 ND 9.48 8.417 ug/L 89 50 - 120 9.48 ND LQ 16.61 J,DX ug/L NC 45 - 120 ND 9.48 6.781 J,DX ug/L 72 45 - 120 ND 9.48 9.327 ug/L 98 60 - 120

9.782

MS MS

Pentachlorophenol ND 9.48 7.886 ug/L 83 24 - 121 Phenanthrene 8.569 ND 9.48 ug/L 90 65 - 120 Phenol 1.16 J,DX 9.48 9.782 ug/L 91 40 - 120 9.48 11.53 122 55 - 125 Pyrene ND ug/L 9.48 1,2,4-Trichlorobenzene ND 6.791 72 45 - 120 ug/L ND 55 - 120 2,4,6-Trichlorophenol 9.48 9.782 ug/L 103

9.48

2-Methylphenol ND 9.48 8.872 ug/L 94 50 - 120 4-Chloroaniline ND 9.48 50 55 - 120 4.712 J,DX LN ug/L 2-Methylnaphthalene ND 9.48 8.265 ug/L 87 55 - 120 2-Nitroaniline ND 9.48 9.555 J,DX ug/L 101 65 - 120 3-Nitroaniline ND 9.48 ND LN ug/L 0 60 - 120ug/L Dibenzofuran ND 9.48 8.417 89 65 - 120 4-Nitroaniline ND 9.48 4.363 J,DX LN ug/L 46 55 - 125

ND 9.48 45 - 135 Benzo[g,h,i]perylene 10.46 J,DX ug/L 110 ND 9.48 9.479 J,DX 100 40 - 120 Benzyl alcohol ug/L ND 9.48 8.872 45 - 120 bis (2-chloroisopropyl) ether ug/L

MS MS %Recovery Surrogate Qualifier Limits 2-Fluorobiphenyl 93 50 - 120 2-Fluorophenol 76 30 - 120 2,4,6-Tribromophenol 120 40 - 120 Nitrobenzene-d5 95 45 - 120 121 50 ₋ 125 Terphenyl-d14 Phenol-d6 90 35 - 120

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

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

Matrix: Water										ype: To	
Analysis Batch: 21217	•	0	0- "		MOD					Batch:	
Analyte	•	Sample	Spike Added		MSD Qualifier	Unit	D	% Baa	%Rec. Limits	DDD	RPI Lim
Analyte Acenaphthene	ND	Qualifier	9.52 —	8.762	Qualifier	ug/L	— -	%Rec 92	60 ₋ 120		Lim 2
Acenaphthylene	ND ND		9.52	9.981		ug/L ug/L		105	60 - 120	1	2
Aniline	ND		9.52	5.803	IDV	-		61	35 - 120	5	3
Anthracene	ND		9.52	9.371	J,DX	ug/L		98	65 ₋ 120	5 5	 2
Benzidine	ND		9.52	9.57 T	AY	ug/L		0	30 - 160	NC	3
Benzo[a]anthracene	ND		9.52	9.981		ug/L ug/L		105	65 ₋ 120	9	2
Benzo[b]fluoranthene	ND		9.52	9.752	J,DX	ug/L		103	55 - 125	4	2
Benzo[k]fluoranthene	ND		9.52	8.686		ug/L ug/L		91	55 ₋ 125	8	3
Benzoic acid	ND		9.52	19.73	LDV	ug/L ug/L		NC	25 ₋ 125	1	3
Benzo[a]pyrene	ND		9.52	9.219	J,DX	ug/L		97	55 - 130	4	2
Bis(2-chloroethoxy)methane	ND		9.52	8.914		ug/L ug/L		94	50 ₋ 120	5	2
· · · · · · · · · · · · · · · · · · ·	ND		9.52	8.152		-		86	50 ₋ 120	3	2
Bis(2-chloroethyl)ether					IDVIM	ug/L				6	
Bis(2-ethylhexyl) phthalate	ND ND		9.52		J,DX LM	ug/L		150 101	65 ₋ 130		2
4-Bromophenyl phenyl ether	ND		9.52	9.600	IDV	ug/L		101	60 ₋ 120 55 ₋ 130	12	
Butyl benzyl phthalate	ND		9.52	11.81	J,DA	ug/L		124		7	<u>.</u>
4-Chloro-3-methylphenol	ND ND		9.52 9.52	11.43 8.686		ug/L		120 91	60 ₋ 120 60 ₋ 120	2 2	2
2-Chloronaphthalene						ug/L				0	
2-Chlorophenol	ND		9.52	8.381		ug/L		88	45 - 120		2
4-Chlorophenyl phenyl ether	ND		9.52	7.771		ug/L		82	65 ₋ 120	0	2
Chrysene Dibanz(a h)anthrasana	ND		9.52	8.990		ug/L		94	65 - 120	9 2	2
Dibenz(a,h)anthracene	ND		9.52	10.21		ug/L		107	45 - 135		3
Di-n-butyl phthalate	ND ND		9.52 9.52	13.03 6.934	LIVI	ug/L		137 73	60 - 125 40 - 120	8 0	2
1,2-Dichlorobenzene 1,3-Dichlorobenzene	ND ND		9.52	6.329		ug/L		73 66	35 ₋ 120	2	2
						ug/L				- 1	
1,4-Dichlorobenzene	ND ND		9.52 9.52	6.346 ND	^	ug/L		67 0	35 ₋ 120	NC	2
3,3'-Dichlorobenzidine	ND		9.52	9.143	AT	ug/L		96	45 ₋ 135 55 ₋ 120	2	2
2,4-Dichlorophenol						ug/L			55 ₋ 120	0	2 3
Diethyl phthalate	ND ND		9.52 9.52	8.762 9.829		ug/L		92 103	40 ₋ 120	9	2 2
2,4-Dimethylphenol	ND ND					ug/L		88		9 7	3
Dimethyl phthalate			9.52	8.381	IDV	ug/L			30 - 120	15	
4,6-Dinitro-2-methylphenol	ND		9.52	9.676 ND	J,DX	ug/L		102	45 ₋ 120		2
2,4-Dinitrophenol	ND		9.52 9.52	7.924		ug/L		0	40 - 120	NC 2	2
2,4-Dinitrotoluene	ND			8.533		ug/L		83	65 - 120	- - :	2
2,6-Dinitrotoluene	ND ND		9.52 9.52	19.20		ug/L ug/L		90	65 ₋ 120 65 ₋ 135	4 1	2
Di-n-octyl phthalate	ND		9.52	9.676	LIVI	ug/L ug/L		202 102	60 - 120	5	2
1,2-Diphenylhydrazine(as Azobenzene)	ND		9.52	9.070		ug/L		102	00 - 120	5	2
Fluoranthene	ND		9.52	11.05		ug/L		116	60 - 120	8	2
Fluorene	ND		9.52	8.381		ug/L		88	65 - 120	2	2
Hexachlorobenzene	ND		9.52	9.295		ug/L		98	60 - 120	2	2
Hexachlorobutadiene	ND		9.52	5.610	J,DX	ug/L		59	40 - 120	6	2
Hexachloroethane	ND		9.52	5.746		ug/L		60	35 - 120	6	2
Hexachlorocyclopentadiene	ND		9.52	2.686		ug/L		28	25 - 120	2	3
Indeno[1,2,3-cd]pyrene	ND		9.52	11.58		ug/L		122	40 - 135	9	3
Isophorone	ND		9.52	12.19	LM	ug/L		128	50 ₋ 120	4	2
4-Methylphenol	ND		9.52	9.524		ug/L		100	50 - 120	1	2
Naphthalene	ND		9.52	8.000		ug/L		84	55 - 120	1	2
Nitrobenzene	ND		9.52	10.67		ug/L		112	55 - 120	6	2
2-Nitrophenol	ND		9.52	8.457		ug/L		89	50 - 120	0	2
4-Nitrophenol	ND	10	9.52	ND		ug/L		0	45 - 120	NC	 3

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

Lab Sample ID: 440-8891-A-1-B MSD

Matrix: Water

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

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

matrix rrato.									ор .	, po o.	
Analysis Batch: 21217									Prep	Batch:	21041
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
N-Nitrosodimethylamine	ND		9.52	7.476	J,DX	ug/L		78	45 - 120	10	25
N-Nitrosodiphenylamine	ND		9.52	9.829		ug/L		103	60 - 120	5	25
N-Nitrosodi-n-propylamine	ND		9.52	10.36		ug/L		109	45 - 120	6	25
Pentachlorophenol	ND		9.52	7.253	J,DX	ug/L		76	24 - 121	8	25
Phenanthrene	ND		9.52	9.067		ug/L		95	65 - 120	6	25
Phenol	1.16	J,DX	9.52	9.524		ug/L		88	40 - 120	3	25
Pyrene	ND		9.52	11.81		ug/L		124	55 ₋ 125	2	25
1,2,4-Trichlorobenzene	ND		9.52	6.815		ug/L		72	45 - 120	0	20
2,4,6-Trichlorophenol	ND		9.52	9.981		ug/L		105	55 - 120	2	30
2-Methylphenol	ND		9.52	8.914		ug/L		94	50 - 120	0	25
4-Chloroaniline	ND		9.52	3.434	J,DX AY	ug/L		36	55 - 120	31	25
					RA						
2-Methylnaphthalene	ND		9.52	9.067		ug/L		95	55 ₋ 120	9	20
2-Nitroaniline	ND		9.52	8.305	J,DX	ug/L		87	65 - 120	14	25
3-Nitroaniline	ND		9.52	ND	AY	ug/L		0	60 - 120	NC	25
Dibenzofuran	ND		9.52	8.610		ug/L		90	65 - 120	2	25
4-Nitroaniline	ND		9.52	2.482	J,DX AY RA	ug/L		26	55 - 125	55	25
Benzo[g,h,i]perylene	ND		9.52	10.51	J,DX	ug/L		110	45 - 135	0	30
Benzyl alcohol	ND		9.52	9.981	J,DX	ug/L		105	40 - 120	5	30
bis (2-chloroisopropyl) ether	ND		9.52	8.838		ug/L		93	45 - 120	0	25

MSD MSD

Surrogate	%Recovery	Qualifier	Limits			
2-Fluorobiphenyl	94		50 - 120			
2-Fluorophenol	80		30 - 120			
2,4,6-Tribromophenol	120		40 - 120			
Nitrobenzene-d5	99		45 - 120			
Terphenyl-d14	124		50 ₋ 125			
Phenol-d6	88		35 - 120			

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 440-19543/3 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA

Analysis Batch: 19543

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		1.0	0.25	ug/L			04/13/12 09:33	1

Lab Sample ID: LCS 440-19543/2

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analysis Batch: 19543

Matrix: Water

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chromium, hexavalent	50.0	52.4		ug/L	_	105	90 - 110	

Project/Site: Annual Outfall 008 Grab

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: 440-8626-G-3 MS

Matrix: Water

Analysis Batch: 19543

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

TestAmerica Job ID: 440-8620-1

Prep Type: Total/NA

Sample Sample Spike MS MS %Rec. Result Qualifier Added Analyte Result Qualifier %Rec Limits Unit D 50.0 103 90 - 110 Chromium, hexavalent 12 62.9 ug/L

Lab Sample ID: 440-8626-G-3 MSD

Matrix: Water

Analysis Batch: 19543

MSD MSD %Rec. RPD Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Chromium, hexavalent 12 50.0 65.3 ug/L 108 90 - 110

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-19784/2

Matrix: Water

Analysis Batch: 19784

MR MR

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.080	mg/L			04/14/12 10:38	1
Nitrate Nitrite as N	ND		0.26	0.19	mg/L			04/14/12 10:38	1
Nitrite as N	ND		0.15	0.11	mg/L			04/14/12 10:38	1

Lab Sample ID: LCS 440-19784/3

Matrix: Water

Analysis Batch: 19784

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Nitrate as N	 1.13	1.09		mg/L		97	90 - 110	
Nitrate Nitrite as N	2.65	2.53		mg/L		95	90 - 110	
Nitrite as N	1.52	1.44		mg/L		95	90 - 110	

Lab Sample ID: 440-8670-A-1 MS

Matrix: Water

Analysis Batch: 19784

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Nitrate as N	0.26		1.13	1.30		mg/L		92	80 - 120	
Nitrate Nitrite as N	0.39		2.65	2.80		mg/L		91	80 - 120	
Nitrite as N	0.13	J,DX	1.52	1.50		mg/L		90	80 - 120	

Lab Sample ID: 440-8670-A-1 MSD

Matrix: Water

Analysis Ratch: 19784

Alialysis Datcil. 13704											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Nitrate as N	0.26		1.13	1.27		mg/L		89	80 - 120	2	20
Nitrate Nitrite as N	0.39		2.65	2.75		mg/L		89	80 - 120	2	20
Nitrite as N	0.13	J,DX	1.52	1.48		mg/L		89	80 - 120	1	20

TestAmerica Irvine 6/15/2012

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

мв мв

Lab Sample ID: MB 440-19785/2

Matrix: Water

Sulfate

Analysis Batch: 19785

Client Sample ID: Method Blank

Prep Type: Total/NA

Result Qualifier RL MDL Unit Dil Fac D Prepared Analyzed Analyte 0.50 Chloride ND 0.40 mg/L 04/14/12 10:38 04/14/12 10:38 Sulfate ND 0.50 0.40 mg/L

Lab Sample ID: LCS 440-19785/3 **Client Sample ID: Lab Control Sample**

Matrix: Water Prep Type: Total/NA

Analysis Batch: 19785

LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit %Rec Limits Chloride 5.00 4 68 94 90 - 110 mg/L

10.0

Lab Sample ID: 440-8670-A-1 MS Client Sample ID: Matrix Spike

Matrix: Water Prep Type: Total/NA

9.37

mg/L

94

90 - 110

Analysis Batch: 19785 Sample Sample Spike MS MS %Rec.

Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Chloride 0.93 5.00 91 80 - 120 5.48 mg/L Sulfate 10.0 93 80 - 120 14 10.7 mg/L

Lab Sample ID: 440-8670-A-1 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

Matrix: Water

Analysis Batch: 19785

,	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	0.93		5.00	5.46		mg/L		90	80 - 120	0	20	
Sulfate	1.4		10.0	10.8		mg/L		94	80 - 120	1	20	

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 440-20654/36 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 20654

MB MB

Analyte Result Qualifier RL MDL Unit D Dil Fac Prepared Analyzed Perchlorate ND 4.0 0.95 ug/L 04/19/12 19:22

Lab Sample ID: LCS 440-20654/37 Client Sample ID: Lab Control Sample

Matrix: Water Analysis Batch: 20654

Spike LCS LCS %Rec. babbA Result Qualifier Unit %Rec Limits

Analyte Perchlorate 25.0 26.6 ug/L 106 85 - 115

Lab Sample ID: MRL 440-20654/2 MRL **Client Sample ID: Lab Control Sample**

Matrix: Water Prep Type: Total/NA Analysis Batch: 20654

Spike MRL MRL %Rec. Analyte Added Result Qualifier Unit D Limits %Rec Perchlorate 4.00 4.49 112 ug/L

Prep Type: Total/NA

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 440-8689-I-1 MS

Matrix: Water

Analysis Batch: 20654

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

MS MS %Rec. Sample Sample Spike Result Qualifier babbA Limits Analyte Result Qualifier Unit D %Rec Perchlorate 1.4 J,DX 25.0 20.8 LN ug/L 78 80 - 120

Lab Sample ID: 440-8689-I-1 MSD

Matrix: Water

Analysis Batch: 20654

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Perchlorate JDX 25.0 22.8 ug/L 86 80 - 120 9 17 20

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

Lab Sample ID: G2D230000077B

Matrix: Water

Analysis Batch: 2114077

Client Sample ID: Method Blank **Prep Type: Total**

Client Sample ID: Matrix Spike Duplicate

Prep Batch: 2114077_P

Prep Type: Total/NA

MR MR Analyte Result Qualifier ML **EDL** Unit Prepared Analyzed Dil Fac 2,3,7,8-TCDD ND 0.000010 0.00000093 ug/L 04/23/12 09:00 04/24/12 16:35 Total TCDD 0.000038 0.000010 0.00000041 04/23/12 09:00 04/24/12 16:35 1,2,3,7,8-PeCDD ND 0.000050 0.0000014 04/23/12 09:00 04/24/12 16:35 ua/L Total PeCDD ND 0.000050 0.0000014 ug/L 04/23/12 09:00 04/24/12 16:35 1,2,3,4,7,8-HxCDD 0.0000011 JQ 0.000050 0.0000013 04/23/12 09:00 04/24/12 16:35 ua/L 0.000050 0.0000013 04/24/12 16:35 1.2.3.6.7.8-HxCDD 0.0000017 ug/L 04/23/12 09:00 1,2,3,7,8,9-HxCDD 0.0000024 0.000050 0.0000011 ug/L 04/23/12 09:00 04/24/12 16:35 Total HxCDD 0.000050 0.0000012 04/23/12 09:00 04/24/12 16:35 0.0000053 JQ ug/L 1,2,3,4,6,7,8-HpCDD 0.0000037 0.000050 0.0000057 ug/L 04/23/12 09:00 04/24/12 16:35 0.0000064 Total HpCDD 0.000050 0.00000057 ug/L 04/23/12 09:00 04/24/12 16:35 OCDD 0.000016 0.000000040 04/24/12 16:35 0.00010 ug/L 04/23/12 09:00 2,3,7,8-TCDF 04/24/12 16:35 ND 0.000010 0.00000088 ug/L 04/23/12 09:00 Total TCDF ND 0.000010 0.00000088 ug/L 04/23/12 09:00 04/24/12 16:35 0.00000049 1.2.3.7.8-PeCDF 0.0000031 J.Q 0.000050 ua/L 04/23/12 09:00 04/24/12 16:35 2,3,4,7,8-PeCDF 0.0000019 0.000050 0.0000048 04/23/12 09:00 04/24/12 16:35 ug/L Total PeCDF 0.0000050 JQ 0.000050 0.00000048 04/23/12 09:00 04/24/12 16:35 ug/L 1,2,3,4,7,8-HxCDF 0.0000037 JQ 0.000050 0.000000030ug/L 04/23/12 09:00 04/24/12 16:35 1,2,3,6,7,8-HxCDF 0.0000020 J 0.000050 0.000000030 ug/L 04/23/12 09:00 04/24/12 16:35 2,3,4,6,7,8-HxCDF 0.0000020 J 0.000050 0.00000030 ug/L 04/23/12 09:00 04/24/12 16:35 1,2,3,7,8,9-HxCDF 0.0000016 JQ 0.000050 0.000000030 ug/L 04/23/12 09:00 04/24/12 16:35 Total HxCDF 0.000011 JQ 0.000050 0.000000030ug/L 04/23/12 09:00 04/24/12 16:35 1,2,3,4,6,7,8-HpCDF 0.0000035 0.000050 0.0000016 ug/L 04/23/12 09:00 04/24/12 16:35 0.000050 0.0000018 1,2,3,4,7,8,9-HpCDF 0.0000041 ug/L 04/23/12 09:00 04/24/12 16:35 Total HpCDF 0.0000094 0.000050 0.0000017 04/23/12 09:00 04/24/12 16:35 OCDF 0.0000070 0.00010 0.00000031 04/23/12 09:00 04/24/12 16:35 ug/L

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 37CI4-2,3,7,8-TCDD 35 _ 197 04/23/12 09:00 86 04/24/12 16:35

	MB	ΜВ	
Internal Standard	%Recovery	Qualifier	Limits
13C-2,3,7,8-TCDD	41		25 - 164
13C-1,2,3,7,8-PeCDD	50		25 - 181
13C-1,2,3,4,7,8-HxCDD	54		32 - 141

Prepared Dil Fac Analyzed 04/23/12 09:00 04/24/12 16:35 04/23/12 09:00 04/24/12 16:35 1 04/23/12 09:00 04/24/12 16:35

Project/Site: Annual Outfall 008 Grab

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

Lab Sample ID: G2D230000077B

Matrix: Water

Analysis Batch: 2114077

Client Sample ID: Method Blank **Prep Type: Total**

Prep Batch: 2114077_P

	MB	MB				
Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	53		28 - 130	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,6,7,8-HpCDD	72		23 - 140	04/23/12 09:00	04/24/12 16:35	1
13C-OCDD	56		17 - 157	04/23/12 09:00	04/24/12 16:35	1
13C-2,3,7,8-TCDF	34		24 - 169	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,7,8-PeCDF	39		24 - 185	04/23/12 09:00	04/24/12 16:35	1
13C-2,3,4,7,8-PeCDF	43		21 - 178	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,6,7,8-HxCDF	50		26 - 123	04/23/12 09:00	04/24/12 16:35	1
13C-2,3,4,6,7,8-HxCDF	47		28 - 136	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,7,8,9-HxCDF	50		29 - 147	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,6,7,8-HpCDF	52		28 - 143	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,7,8,9-HpCDF	58		26 - 138	04/23/12 09:00	04/24/12 16:35	1
13C-1,2,3,4,7,8-HxCDF	47		26 - 152	04/23/12 09:00	04/24/12 16:35	1

Lab Sample ID: G2D230000077C

Matrix: Water

Analysis Batch: 2114077

Client Sample ID: Lab Control Sample Prep Type: Total

Prep Batch: 2114077_P

	Spike	LCS	LCS				%Rec.	_
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
2,3,7,8-TCDD	0.000200	0.000181		ug/L		91	67 - 158	
1,2,3,7,8-PeCDD	0.00100	0.000877		ug/L		88	70 - 142	
1,2,3,4,7,8-HxCDD	0.00100	0.000920	В	ug/L		92	70 - 164	
1,2,3,6,7,8-HxCDD	0.00100	0.000904	В	ug/L		90	76 - 134	
1,2,3,7,8,9-HxCDD	0.00100	0.000924	В	ug/L		92	64 - 162	
1,2,3,4,6,7,8-HpCDD	0.00100	0.000954	В	ug/L		95	70 - 140	
OCDD	0.00200	0.00188	В	ug/L		94	78 - 144	
2,3,7,8-TCDF	0.000200	0.000194		ug/L		97	75 - 158	
1,2,3,7,8-PeCDF	0.00100	0.000945	В	ug/L		94	80 - 134	
2,3,4,7,8-PeCDF	0.00100	0.000869	В	ug/L		87	68 - 160	
1,2,3,4,7,8-HxCDF	0.00100	0.000957	В	ug/L		96	72 - 134	
1,2,3,6,7,8-HxCDF	0.00100	0.000963	В	ug/L		96	84 - 130	
2,3,4,6,7,8-HxCDF	0.00100	0.000955	В	ug/L		95	70 - 156	
1,2,3,7,8,9-HxCDF	0.00100	0.00101	В	ug/L		101	78 - 130	
1,2,3,4,6,7,8-HpCDF	0.00100	0.000948	В	ug/L		95	82 - 122	
1,2,3,4,7,8,9-HpCDF	0.00100	0.000904	В	ug/L		90	78 ₋ 138	
OCDF	0.00200	0.00173	В	ug/L		87	63 - 170	

Surrogate	%Recovery	Qualifier	Limits
37CI4-2,3,7,8-TCDD	85		31 - 191

LCS	L	.cs

Internal Standard	%Recovery	Qualifier	Limits
13C-2,3,7,8-TCDD	41		20 - 175
13C-1,2,3,7,8-PeCDD	48		21 - 227
13C-1,2,3,4,7,8-HxCDD	51		21 - 193
13C-1,2,3,6,7,8-HxCDD	50		25 - 163
13C-1,2,3,4,6,7,8-HpCDD	71		26 - 166
13C-OCDD	58		13 - 199
13C-2,3,7,8-TCDF	34		22 - 152
13C-1,2,3,7,8-PeCDF	36		21 - 192

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

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

Lab Sample ID: G2D230000077C

Matrix: Water

Analysis Batch: 2114077

Client Sample ID: Lab Control Sample Prep Type: Total

Prep Batch: 2114077_P

LCS LCS

Internal Standard	%Recovery	Qualifier	Limits
13C-2,3,4,7,8-PeCDF	40		13 - 328
13C-1,2,3,6,7,8-HxCDF	48		21 - 159
13C-2,3,4,6,7,8-HxCDF	44		22 - 176
13C-1,2,3,7,8,9-HxCDF	48		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	52		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	58		20 - 186
13C-1,2,3,4,7,8-HxCDF	43		19 - 202

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 440-21521/1-A

Matrix: Water

Analysis Batch: 21778

Client Sample ID: Method Blank Prep Type: Total Recoverable

Prep Batch: 21521

_	MD	MB						•	
						_	_		
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		50	40	ug/L		04/24/12 09:36	04/24/12 20:32	1
Arsenic	ND		10	7.0	ug/L		04/24/12 09:36	04/24/12 20:32	1
Boron	ND		0.050	0.020	mg/L		04/24/12 09:36	04/24/12 20:32	1
Beryllium	ND		2.0	0.90	ug/L		04/24/12 09:36	04/24/12 20:32	1
Calcium	ND		0.10	0.050	mg/L		04/24/12 09:36	04/24/12 20:32	1
Chromium	ND		5.0	2.0	ug/L		04/24/12 09:36	04/24/12 20:32	1
Iron	ND		0.040	0.015	mg/L		04/24/12 09:36	04/24/12 20:32	1
Magnesium	ND		0.020	0.012	mg/L		04/24/12 09:36	04/24/12 20:32	1
Nickel	ND		10	2.0	ug/L		04/24/12 09:36	04/24/12 20:32	1
Vanadium	ND		10	3.0	ug/L		04/24/12 09:36	04/24/12 20:32	1
Zinc	ND		20	6.0	ug/L		04/24/12 09:36	04/24/12 20:32	1
Silver	ND		10	6.0	ug/L		04/24/12 09:36	04/24/12 20:32	1

Lab Sample ID: LCS 440-21521/2-A

Matrix: Water

Analysis Batch: 21778

Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 21521

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Aluminum	500	472		ug/L		94	85 - 115
Arsenic	500	480		ug/L		96	85 - 115
Boron	0.500	0.510		mg/L		102	85 ₋ 115
Beryllium	500	477		ug/L		95	85 - 115
Calcium	2.50	2.48		mg/L		99	85 ₋ 115
Chromium	500	531		ug/L		106	85 ₋ 115
Iron	0.500	0.484		mg/L		97	85 - 115
Magnesium	2.50	2.51		mg/L		101	85 ₋ 115
Nickel	500	487		ug/L		97	85 ₋ 115
Vanadium	500	519		ug/L		104	85 ₋ 115
Zinc	500	501		ug/L		100	85 ₋ 115
Silver	250	258		ug/L		103	85 - 115

Project/Site: Annual Outfall 008 Grab

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

Lab Sample ID: 440-8409-X-1-D MS

Matrix: Water

Analysis Batch: 21778

Client Sample ID: Matrix Spike **Prep Type: Total Recoverable** Prep Batch: 21521

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Aluminum	ND		500	495		ug/L		99	70 - 130	
Arsenic	ND		500	496		ug/L		99	70 - 130	
Boron	0.030	J,DX	0.500	0.545		mg/L		103	70 _ 130	
Beryllium	ND		500	492		ug/L		98	70 - 130	
Calcium	32		2.50	35.0	BB	mg/L		130	70 - 130	
Chromium	ND		500	529		ug/L		106	70 - 130	
Iron	0.17		0.500	0.657		mg/L		98	70 - 130	
Magnesium	8.5		2.50	11.0		mg/L		100	70 - 130	
Nickel	3.4	J,DX	500	468		ug/L		93	70 - 130	
Vanadium	ND		500	530		ug/L		106	70 - 130	
Zinc	6.1	J,DX	500	503		ug/L		99	70 - 130	
Silver	ND		250	252		ug/L		101	70 - 130	

Lab Sample ID: 440-8409-X-1-E MSD

Matrix: Water

Analysis Batch: 21778

Client Sample ID: Matrix Spike Duplicate Prep Type: Total Recoverable

Prep Batch: 21521

Alialysis Dalcii. 21770									Prep Batch. 213				
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
Aluminum	ND		500	496		ug/L		99	70 - 130	0	20		
Arsenic	ND		500	491		ug/L		98	70 - 130	1	20		
Boron	0.030	J,DX	0.500	0.547		mg/L		103	70 - 130	0	20		
Beryllium	ND		500	493		ug/L		99	70 - 130	0	20		
Calcium	32		2.50	34.7	BB	mg/L		120	70 - 130	1	20		
Chromium	ND		500	525		ug/L		105	70 - 130	1	20		
Iron	0.17		0.500	0.657		mg/L		98	70 - 130	0	20		
Magnesium	8.5		2.50	11.0		mg/L		101	70 - 130	0	20		
Nickel	3.4	J,DX	500	469		ug/L		93	70 - 130	0	20		
Vanadium	ND		500	529		ug/L		106	70 - 130	0	20		
Zinc	6.1	J,DX	500	500		ug/L		99	70 - 130	1	20		
Silver	ND		250	251		ug/L		100	70 - 130	0	20		

Lab Sample ID: 440-8613-A-1-B MS

Matrix: Water

Analysis Batch: 21778

Client Sample ID: Matrix Spike **Prep Type: Total Recoverable** Prep Batch: 21521

•	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Boron	ND		0.500	0.502		mg/L		100	70 - 130
Beryllium	ND		500	476		ug/L		95	70 - 130
Calcium	4.4		2.50	6.64		mg/L		91	70 - 130
Chromium	ND		500	519		ug/L		104	70 - 130
Iron	0.038	J,DX	0.500	0.515		mg/L		95	70 - 130
Magnesium	0.54		2.50	2.93		mg/L		96	70 - 130
Nickel	2.4	J,DX	500	470		ug/L		94	70 - 130
Vanadium	ND		500	510		ug/L		102	70 - 130
Zinc	25		500	504		ug/L		96	70 - 130
Silver	ND		250	250		ug/L		100	70 - 130

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

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

Lab Sample ID: 440-8613-A-1-C MSD

Matrix: Water

Vanadium

Matrix: Water

Zinc

Silver

Analysis Batch: 21778

Client Sample ID: Matrix Spike Duplicate **Prep Type: Total Recoverable**

Prep Batch: 21521

Sample Sample Spike MSD MSD Qualifier RPD Limit babbA Qualifier D %Rec Limits Analyte Result Result Unit Boron ND 0.500 0.516 mg/L 103 70 - 130 3 20 Beryllium ND 500 482 ug/L 96 70 - 130 20 2.50 Calcium 4.4 6.68 mg/L 93 70 - 130 20 ND Chromium 500 523 ug/L 105 70 - 130 20 Iron 0.038 J,DX 0.500 0.515 mg/L 95 70 - 130 0 20 Magnesium 0.54 2.50 3.00 mg/L 99 70 - 130 20 94 Nickel J,DX 500 472 ug/L 70 - 130 20 2.4 0

518

515

255

ug/L

ug/L

ug/L

500

500

250

Client Sample ID: Method Blank **Prep Type: Dissolved**

70 - 130

70 - 130

70 - 130

Prep Batch: 21302

2

20

20

104

98

102

Analysis Batch: 21614 MB MB Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Aluminum ND 50 04/23/12 10:11 04/24/12 11:42 40 ug/L Boron 0.0317 J,DX 0.050 04/23/12 10:11 04/24/12 11:42 0.020 mg/L Beryllium ND 2.0 0.90 ug/L 04/23/12 10:11 04/24/12 11:42 Calcium ND 04/24/12 11:42 0.10 0.050 mg/L 04/23/12 10:11 Chromium ND 04/23/12 10:11 04/24/12 11:42 5.0 2.0 ug/L Iron ND 0.040 0.015 mg/L 04/23/12 10:11 04/24/12 11:42 ND 0.020 0.012 04/23/12 10:11 04/24/12 11:42 Magnesium mg/L Nickel ND 04/24/12 11:42 10 2.0 ug/L 04/23/12 10:11 Vanadium ND 10 3.0 ug/L 04/23/12 10:11 04/24/12 11:42 Zinc ND 20 6.0 ug/L 04/23/12 10:11 04/24/12 11:42 04/23/12 10:11 04/24/12 11:42 Silver ND 10 6.0 ug/L

Lab Sample ID: MB 440-20065/1-C

Lab Sample ID: MB 440-20065/1-C

Matrix: Water

Analysis Batch: 23613

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 21302

мв мв

ND

25

ND

Analyte Result Qualifier RL MDL Unit Dil Fac Prepared Analyzed Arsenic ND 10 7.0 ug/L 04/23/12 10:11 05/03/12 14:55

Lab Sample ID: LCS 440-20065/2-C

Matrix: Water

Analysis Batch: 21614

Client Sample ID: Lab Control Sample Prep Type: Dissolved

Prep Batch: 21302

-	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Aluminum	500	502	-	ug/L		100	85 _ 115	
Boron	0.500	0.548		mg/L		110	85 ₋ 115	
Beryllium	500	506		ug/L		101	85 _ 115	
Calcium	2.50	2.49		mg/L		100	85 - 115	
Chromium	500	527		ug/L		105	85 _ 115	
Iron	0.500	0.506		mg/L		101	85 _ 115	
Magnesium	2.50	2.56		mg/L		102	85 ₋ 115	
Nickel	500	502		ug/L		100	85 _ 115	
Vanadium	500	520		ug/L		104	85 - 115	
7inc	500	502		ua/L		100	85 - 115	

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

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

Lab Sample ID: LCS 440-20065/2-C Client Sample ID: Lab Control Sample **Matrix: Water Prep Type: Dissolved Analysis Batch: 21614** Prep Batch: 21302 LCS LCS Spike

Analyte Added Result Qualifier Unit D %Rec Limits Silver 250 258 103 85 - 115 ug/L

Lab Sample ID: LCS 440-20065/2-C Client Sample ID: Lab Control Sample **Matrix: Water Prep Type: Dissolved**

Analysis Batch: 23613 Prep Batch: 21302 Spike LCS LCS

Added Analyte Result Qualifier Unit %Rec Limits D 500 85 - 115 Arsenic 498 ug/L 100

Lab Sample ID: 440-8609-F-12-F MS Client Sample ID: Matrix Spike

Matrix: Water Prep Type: Dissolved

Prep Batch: 21302 **Analysis Batch: 21614**

Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Limits Analyte Unit D %Rec Aluminum 120 500 618 ug/L 100 70 - 130 Boron 0.033 J.DX MB 0.500 0.540 mg/L 101 70 130 Beryllium ND 500 494 ug/L 99 70 - 130 Calcium 17 2.50 19.7 BB 95 70 - 130 mg/L Chromium ND 500 519 ug/L 104 70 - 130 0.500 0.613 97 70 - 130 Iron 0.13 mg/L Magnesium 3.1 2.50 5.40 mg/L 94 70 - 130 Nickel 3.5 J,DX 500 480 ug/L 95 70 - 130 Vanadium ND 500 516 ug/L 103 70 - 130 Zinc ND 500 495 ug/L 70 - 130 ND 250 252 70 - 130 Silver ug/L 101

Lab Sample ID: 440-8609-F-12-F MS Client Sample ID: Matrix Spike **Matrix: Water Prep Type: Dissolved**

Analysis Batch: 23613 Prep Batch: 21302

Sample Sample Spike MS MS Result Qualifier Added Analyte Result Qualifier Limits Unit %Rec 500 105 70 - 130 Arsenic ND 527 ug/L

Lab Sample ID: 440-8609-F-12-G MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Water Prep Type: Dissolved**

Analysis Batch: 21614 Prep Batch: 21302

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aluminum	120		500	632		ug/L		103	70 - 130	2	20
Boron	0.033	J,DX MB	0.500	0.552		mg/L		104	70 - 130	2	20
Beryllium	ND		500	493		ug/L		99	70 - 130	0	20
Calcium	17		2.50	20.0	BB	mg/L		106	70 - 130	1	20
Chromium	ND		500	528		ug/L		106	70 - 130	2	20
Iron	0.13		0.500	0.632		mg/L		101	70 - 130	3	20
Magnesium	3.1		2.50	5.43		mg/L		95	70 - 130	1	20
Nickel	3.5	J,DX	500	484		ug/L		96	70 - 130	1	20
Vanadium	ND		500	521		ug/L		104	70 - 130	1	20
Zinc	ND		500	499		ug/L		100	70 - 130	1	20
Silver	ND		250	256		ug/L		102	70 - 130	2	20
<u></u>											

Spike

Added

500

MSD MSD

516

Result Qualifier

Unit

ug/L

D

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

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

Sample Sample

ND

Result Qualifier

Lab Sample ID: 440-8609-F-12-G MSD

Matrix: Water

Analyte

Arsenic

Analysis Batch: 23613

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Prep Batch: 21302 %Rec. RPD

 %Rec.
 RPD

 %Rec
 Limits
 RPD
 Limit

 103
 70 - 130
 2
 20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-21402/1-A

Matrix: Water

Analysis Batch: 22628

Client Sample ID: Method Blank Prep Type: Total Recoverable

Prep Batch: 21402

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		04/23/12 17:06	04/28/12 18:39	1
Copper	ND		2.0	0.50	ug/L		04/23/12 17:06	04/28/12 18:39	1
Lead	ND		1.0	0.20	ug/L		04/23/12 17:06	04/28/12 18:39	1
Antimony	ND		2.0	0.30	ug/L		04/23/12 17:06	04/28/12 18:39	1
Selenium	ND		2.0	0.50	ug/L		04/23/12 17:06	04/28/12 18:39	1
Thallium	ND		1.0	0.20	ug/L		04/23/12 17:06	04/28/12 18:39	1

Lab Sample ID: LCS 440-21402/2-A

Matrix: Water

Analysis Batch: 22628

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

Prep Batch: 21402

-	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cadmium	80.0	79.1		ug/L		99	85 - 115	
Copper	80.0	76.4		ug/L		96	85 - 115	
Lead	80.0	79.2		ug/L		99	85 - 115	
Antimony	80.0	82.1		ug/L		103	85 - 115	
Selenium	80.0	86.4		ug/L		108	85 - 115	
Thallium	80.0	80.0		ua/L		100	85 ₋ 115	

Lab Sample ID: MB 440-20333/1-D

Matrix: Water

Analysis Batch: 22326

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 21438

	IVI D IVI	ID						
Analyte	Result Q	ualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	1.0	0.10	ug/L		04/23/12 20:10	04/27/12 00:57	1
Lead	ND	1.0	0.20	ug/L		04/23/12 20:10	04/27/12 00:57	1
Antimony	ND	2.0	0.30	ug/L		04/23/12 20:10	04/27/12 00:57	1
Selenium	ND	2.0	0.50	ug/L		04/23/12 20:10	04/27/12 00:57	1

Lab Sample ID: MB 440-20333/1-D

Matrix: Water

Analysis Batch: 22566

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 21438

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND	2.0	0.50	ug/L		04/23/12 20:10	04/27/12 18:52	1
Thallium	ND	1.0	0.20	ug/L		04/23/12 20:10	04/27/12 18:52	1

MR MR

Project/Site: Annual Outfall 008 Grab

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

Lab Sample ID: LCS 440-20333/2-E Client Sample ID: Lab Control Sample **Matrix: Water Prep Type: Dissolved Analysis Batch: 22326** Prep Batch: 21438

Spike LCS LCS Analyte Added Result Qualifier %Rec Limits Unit D 80.0 Cadmium 85.5 ug/L 107 85 - 115 80.0 88.3 Lead ug/L 110 85 - 115 80.0 85.6 Antimony ug/L 107 85 - 115 Selenium 80.0 88.0 ug/L 110 85 - 115

Lab Sample ID: LCS 440-20333/2-E Client Sample ID: Lab Control Sample **Matrix: Water Prep Type: Dissolved**

Analysis Batch: 22566

Prep Batch: 21438 LCS LCS Spike %Rec. Analyte Added Result Qualifier Unit D %Rec Limits

Copper 80.0 88.2 ug/L 110 85 - 115 Thallium 80.0 83.2 ug/L 104 85 - 115

Lab Sample ID: 440-8693-1 MS Client Sample ID: Outfall 008 composite **Matrix: Water Prep Type: Dissolved**

Analysis Batch: 22326 Prep Batch: 21438

Sample Sample Spike MS MS Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Cadmium ND 80.0 86.8 ug/L 109 70 - 130 Lead ND 80.0 85.6 ug/L 107 70 - 130 ND 80.0 84.2 105 70 - 130 Antimony ug/L ug/L ND 80.0 97.3 122 70 - 130 Selenium

Lab Sample ID: 440-8693-1 MS Client Sample ID: Outfall 008 composite **Matrix: Water Prep Type: Dissolved**

Analysis Batch: 22566

Prep Batch: 21438 Sample Sample Spike MS MS %Rec. Result Qualifier Added Result Qualifier Analyte Unit D %Rec Limits Copper 3.6 J,DX 80.0 90.1 ug/L 108 70 - 130

80.0

1.2 J,DX

ND

Lab Sample ID: 440-8693-1 MSD Client Sample ID: Outfall 008 composite **Matrix: Water Prep Type: Dissolved**

81.2

95.4

ug/L

ug/L

100

119

70 - 130

70 - 130

Analysis Batch: 22326

Thallium

Selenium

Prep Batch: 21438 Sample Sample Spike MSD MSD RPD %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Cadmium ND 80.0 85.5 107 70 - 130 2 20 ug/L ND 80.0 83.9 Lead ug/L 105 70 - 1302 20 ND Antimony 80.0 84.1 ug/L 105 70 - 130 0 20

Client Sample ID: Outfall 008 composite Lab Sample ID: 440-8693-1 MSD **Matrix: Water Prep Type: Dissolved**

80.0

Analysis Batch: 22566 Prep Batch: 21438

	Sample	Sample	Spike	MSD	MSD				%Rec.			RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	F	RPD	Limit
Copper	3.6	J,DX	80.0	88.3		ug/L		106	70 - 130		2	20
Thallium	1.2	J,DX	80.0	78.9		ug/L		97	70 - 130		3	20

Client Sample ID: Method Blank

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-20031/1-A **Matrix: Water**

Analysis Batch: 20257

мв мв

Sample Sample

Sample Sample

ND

Result Qualifier

MR MR

Result

Sample Sample

Qualifier

Result

ND

ND

Qualifier

Qualifier

Result

ND

Result Qualifier RL MDL Unit D Prepared Dil Fac Analyte Analyzed 0.20 0.10 ug/L 04/16/12 15:03 04/17/12 12:34 Mercury ND

Spike

Added

8.00

RL

0.20

LCS LCS

MS MS

MSD MSD

Result

8.03

Result

7.88

Qualifier

Qualifier

Qualifier

MDL Unit

0.10 ug/L

LCS LCS

MS MS

8.10

Result Qualifier

8 17

Result Qualifier

Unit

ug/L

Unit

ug/L

Unit

ug/L

Unit

ug/L

Unit

ug/L

D

D

D

D

%Rec

%Rec

Prepared

%Rec

%Rec

101

102

100

102

Result

8.15

Lab Sample ID: LCS 440-20031/2-A

Matrix: Water

Analysis Batch: 20257

Analyte

Lab Sample ID: 440-8609-G-14-B MS

Matrix: Water

Mercury

Mercury

Mercury

Analysis Batch: 20257

Analyte

Lab Sample ID: 440-8609-G-14-C MSD **Matrix: Water**

Analysis Batch: 20257

Analyte

Lab Sample ID: MB 440-19679/1-C

Matrix: Water

Analysis Batch: 20502

Analyte Mercury

Analyte

Analyte

Lab Sample ID: LCS 440-19679/2-C

Matrix: Water

Analysis Batch: 20502

Mercury

Lab Sample ID: 440-8443-G-1-C MS

Matrix: Water

Analysis Batch: 20502

Mercury

Lab Sample ID: 440-8443-G-1-D MSD

Matrix: Water

Analysis Batch: 20502

Sample Sample Analyte Result Qualifier Mercury

Spike Added ND 8.00

Result 8.18

MSD MSD Qualifier

Unit D ug/L

%Rec 102

Limits 70 - 130

RPD 1.00

Client Sample ID: Lab Control Sample

Limits

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 20031

Prep Batch: 20031

85 - 115

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 20031

%Rec. %Rec Limits

70 - 130

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 20031 %Rec. RPD

Limits Limit 70 130 1.86 20

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 20049

Dil Fac Analyzed 04/16/12 15:30 04/18/12 12:13

Client Sample ID: Lab Control Sample **Prep Type: Dissolved**

85 - 115

70 - 130

Prep Batch: 20049

Limits

Client Sample ID: Matrix Spike **Prep Type: Dissolved**

Prep Batch: 20049

%Rec. Limits

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved Prep Batch: 20049

%Rec. RPD Limit

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-22035/1-A

Matrix: Water

Analysis Batch: 22042

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

Prep Batch: 22035

мв мв

Result Qualifier RL MDL Unit D Prepared Dil Fac Analyte Analyzed HEM 5.0 1.4 mg/L 04/26/12 07:22 04/26/12 07:38 ND

Lab Sample ID: LCS 440-22035/2-A Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Matrix: Water

Analysis Batch: 22042

Prep Batch: 22035 LCS LCS Spike

Added Analyte Result Qualifier Unit %Rec Limits HEM 20.0 18.1 mg/L 91 78 - 114

Lab Sample ID: LCSD 440-22035/3-A Client Sample ID: Lab Control Sample Dup

Matrix: Water

Analysis Batch: 22042

Prep Type: Total/NA

Prep Batch: 22035

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Method Blank

Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit HEM 20.0 18.5 mg/L

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

Lab Sample ID: MB 440-19957/1

Matrix: Water

Analysis Batch: 19957

MB MB

Result Qualifier RL MDL Unit Analyzed Dil Fac Prepared Total Dissolved Solids ND 10 04/16/12 10:21 10 ma/L

Lab Sample ID: LCS 440-19957/2 Client Sample ID: Lab Control Sample

Matrix: Water

Analysis Batch: 19957

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec Total Dissolved Solids 1000

Lab Sample ID: 440-8418-B-1 DU **Client Sample ID: Duplicate**

934

Matrix: Water

Analysis Batch: 19957

Prep Type: Total/NA

mg/L

93

90 - 110

DU DU Sample Sample RPD Result Qualifier RPD Analyte Result Qualifier Unit Limit **Total Dissolved Solids** 2600 2710 mg/L 3.00 10

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

Lab Sample ID: MB 440-20846/1 Client Sample ID: Method Blank

Matrix: Water

Analysis Batch: 20846

мв мв

Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Total Suspended Solids ND 10 10 mg/L 04/19/12 17:19

Prep Type: Total/NA

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 22248

Prep Type: Total/NA

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

Lab Sample ID: LCS 440-20846/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 20846

	Spike	LCS	LCS			%Rec.	
Analyte	Added	Result	Qualifier U	nit D	%Rec	Limits	
Total Suspended Solids	1000	1020	m	ig/L	102	85 - 115	

Lab Sample ID: 440-8596-A-1 DU

Matrix: Water

Analysis Batch: 20846									
	Sample	Sample	DU	DU					RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D		RPD	Limit
Total Suspended Solids	70		69.0		mg/L		 	1.00	10

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

Lab Sample ID: MB 440-22248/1-A Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 22273

MR MR

Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND	5.0	3.0 ug/L		04/26/12 18:24	04/26/12 21:25	1

Lab Sample ID: LCS 440-22248/2-A Client Sample ID: Lab Control Sample Prep Type: Total/NA

Matrix: Water

Analysis Batch: 22273

Prep Batch: 22248 LCS LCS Spike %Rec. Added Result Qualifier Analyte Unit D %Rec Limits Cyanide, Total 100 110 90 - 110 ug/L 110

Lab Sample ID: 440-9403-A-1-A MS Client Sample ID: Matrix Spike

Matrix: Water

Analysis Batch: 22273

Analysis Batch: 22273									Prep	Batch: 22248
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Cyanide, Total	ND		100	104		ug/L		104	70 - 115	

Lab Sample ID: 440-9403-A-1-C MSD Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA **Analysis Batch: 22273** Prep Batch: 22248 MSD MSD %Rec. RPD Sample Sample Spike Analyte Added RPD Limit Result Qualifier Result Qualifier Unit D %Rec Limits Cyanide, Total ND 100 108 ug/L 108 70 - 115 15

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 440-20387/10 Client Sample ID: Method Blank

Matrix: Water

Analysis Batch: 20387

мв мв

Analyte	Result	Qualifier	RL	MDL	Unit	D)	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.020	mg/L				04/18/12 06:29	1

Prep Type: Total/NA

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 22259

Prep Batch: 22259

Prep Batch: 22259

Client Sample ID: Lab Control Sample

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: LCS 440-20387/9 **Matrix: Water**

Analysis Batch: 20387

Spike LCS LCS %Rec. Added Result Qualifier Limits Analyte Unit D %Rec 1.00 90 - 110 Fluoride 1.00 mg/L 100

Lab Sample ID: 440-8744-J-1 MS

Matrix: Water

Analysis Batch: 20387

MS Sample Sample Spike %Rec. Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits Fluoride 0.12 1.00 1.08 mg/L 96 80 - 120

Lab Sample ID: 440-8744-J-1 MSD

Matrix: Water

Analysis Batch: 20387

Spike MSD MSD %Rec. RPD Sample Sample Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Fluoride 0.12 1.00 1.06 mg/L 1.20 20

Method: SM 4500 NH3 C - Ammonia

Lab Sample ID: MB 440-22259/1-A

Matrix: Water

Analysis Batch: 22271

MB MB

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac ND 0.400 04/26/12 19:26 04/26/12 21:20 Ammonia (as N) 0.157 ma/L

Lab Sample ID: LCS 440-22259/2-A

Matrix: Water

Analysis Batch: 22271

Spike LCS LCS %Rec. Result Qualifier Added Unit D Limits Analyte %Rec 10.0 9.800 85 - 115 Ammonia (as N) mg/L 98

Lab Sample ID: 440-8694-M-1-B MS

Matrix: Water

Analysis Batch: 22271

Prep Batch: 22259 MS MS Sample Sample Spike %Rec. Result Qualifier Result Qualifier Analyte Added Unit %Rec Limits Ammonia (as N) 0.280 J,DX 10.0 9.520 mg/L 92 70 - 120

Lab Sample ID: 440-8694-M-1-C MSD

Matrix: Water

Analysis Batch: 22271 Sample Sample

Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit Ammonia (as N) 0.280 J,DX 10.0 10.08 mg/L 98 70 - 120

> TestAmerica Irvine 6/15/2012

Analyte

Radium-228

Matrix: WATER

Lab Sample ID: S204070-04

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Method: Gross Alpha and Beta - Gross Alpha/Beta

Lab Sample ID: S204070-04							Client Sa	mple ID: Metho	
Matrix: WATER								Prep Type: 1	
Analysis Batch: 8611								Prep Batch:	8611_P
	Blank	Blank							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	60	U	500		pCi/L		04/19/12 00:00	04/19/12 20:21	1
Lab Sample ID: S204070-04							Client Sa	mple ID: Metho	d Blank
Matrix: WATER								Prep Type: 1	otal/NA
Analysis Batch: 8611								Prep Batch:	8611_P
	Blank	Blank							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium-90	0.067	U	2		pCi/L		04/26/12 00:00	04/26/12 12:35	1
Lab Sample ID: S204070-04							Client Sa	mple ID: Metho	d Blank
Matrix: WATER								Prep Type: 1	otal/NA
Analysis Batch: 8611								Prep Batch:	8611_P
-	Blank	Blank							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cesium-137	-0.94	U	20		pCi/L		04/26/12 00:00	04/27/12 00:00	1
Potassium-40	1.73	U	25		pCi/L		04/26/12 00:00	04/27/12 00:00	1
Lab Sample ID: S204070-04							Client Sa	mple ID: Metho	d Blank
Matrix: WATER								Prep Type: 1	otal/NA
Analysis Batch: 8611								Prep Batch:	
, ,	Blank	Blank							_
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium, Total	0	U	1		pCi/L		04/27/12 00:00	04/27/12 09:20	1
Lab Sample ID: S204070-04							Client Sa	mple ID: Metho	d Blank
Matrix: WATER								Prep Type: 1	otal/NA
Analysis Batch: 8611								Prep Batch:	
	Blank	Blank						•	_
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.192	U	3		pCi/L		04/26/12 00:00	04/30/12 08:23	1
Gross Beta	0.051	U	4		pCi/L		04/26/12 00:00	04/30/12 08:23	1
Lab Sample ID: S204070-04							Client Sa	mple ID: Metho	d Blank
Matrix: WATER								Prep Type: 1	otal/NA
Analysis Batch: 8611								Prep Batch:	8611_P
	Blank	Blank							

 Analysis Batch: 8611

 Blank
 Blank

 Analyte
 Result
 Qualifier
 RL
 MDL
 Unit
 D
 Prepared
 Analyzed
 Dil Fac

 Radium-226
 0.182
 U
 1
 pCi/L
 05/04/12 00:00
 05/04/12 13:45
 1

RL

MDL Unit

pCi/L

D

Prepared

04/30/12 00:00

Analyzed

04/30/12 14:11

Client Sample ID: Method Blank

Prep Type: Total/NA

Dil Fac

Result Qualifier

-0.122 U

Project/Site: Annual Outfall 008 Grab

Gross Beta

TestAmerica Job ID: 440-8620-1

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

Lab Sample ID: S204070-03					Client	Sample	e ID: Lab Control Sample
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8611	0						Prep Batch: 8611_P
	Spike		LCS		_	a. =	%Rec.
Analyte	Added		Qualifier	Unit	D	%Rec	Limits
Tritium	2440	2380		pCi/L		98	80 - 120
Lab Sample ID: S204070-03					Client	Sample	ID: Lab Control Sample
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8611							Prep Batch: 8611_P
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Cesium-137		149		pCi/L		101	80 - 120
Cobalt-60	130	126		pCi/L		97	80 - 120
Lab Sample ID: S204070-03					Client	Sample	ID: Lab Control Sample
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8611							Prep Batch: 8611_P
Analysis Batom sorr	Spike	LCS	LCS				%Rec.
Analyte	Added		Qualifier	Unit	D	%Rec	Limits
Strontium-90	9.34	7.84		pCi/L	<u>-</u>	84	80 - 120
Lab Sample ID: S204070-03					Clions	Cample	e ID: Lab Control Sample
Matrix: WATER					Cilein	Janipie	Prep Type: Total/NA
1							
Analysis Batch: 8611	Spike	1.00	LCS				Prep Batch: 8611_P %Rec.
Amelyte	Added		Qualifier	Unit	D	%Rec	MRec.
Analyte	Added		Quaimer		D		
Uranium, Total	50.5	64.2		pCi/L		114	80 - 120
Lab Sample ID: S204070-03					Client	Sample	e ID: Lab Control Sample
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8611							Prep Batch: 8611_P
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Radium-228	4.41	4.73		pCi/L		107	60 - 140
Lab Sample ID: S204070-03					Client	Sample	ID: Lab Control Sample
Matrix: WATER							Prep Type: Total/NA
Analysis Batch: 8611							Prep Batch: 8611_P
	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gross Alpha	37	40.4		pCi/L		109	70 - 130

Lab Sample ID: S204070-03						Client Sample ID: Lab Control Sample		
Matrix: WATER							Prep 1	Type: Total/NA
Analysis Batch: 8611							Prep l	Batch: 8611_P
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Radium-226	50.1	48.5	-	pCi/L		97	80 - 120	

32.6

pCi/L

34

TestAmerica Irvine 6/15/2012

70 - 130

Lab Sample ID: S204070-05

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Client Sample ID: Duplicate

Lab Campio ID. CECTOTO CO							Chone Campic ID. Dapii	oute
Matrix: WATER							Prep Type: Tota	I/NA
Analysis Batch: 8611							Prep Batch: 861	11_F
•	Sample	Sample	Duplicate	Duplicate			•	RP
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limi
Tritium	19.4		18.5	U	pCi/L			
Lab Sample ID: S204070-05							Client Sample ID: Dupli	icate
Matrix: WATER							Prep Type: Tota	ıl/NA
Analysis Batch: 8611							Prep Batch: 861	11_F
	Sample	Sample	Duplicate	Duplicate				RPE
Analyte	Result	Qualifier		Qualifier	Unit	D	RPD	Limi
Strontium-90	-0.131		0.038	U	pCi/L		0	
Lab Sample ID: S204070-05							Client Sample ID: Dupli	icate
Matrix: WATER							Prep Type: Tota	I/NA
Analysis Batch: 8611							Prep Batch: 861	11_F
	Sample	Sample	Duplicate	Duplicate				RPE
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limi
Cesium-137	0.152		-0.761	U	pCi/L			
Potassium-40	-4.54		3.82	U	pCi/L		0	
Lab Sample ID: S204070-05							Client Sample ID: Dupli	icate
Matrix: WATER							Prep Type: Tota	I/NA
Analysis Batch: 8611							Prep Batch: 861	11_P
	Sample	Sample	Duplicate	Duplicate				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Uranium, Total	0.172		0.183	J	pCi/L		6	
Lab Sample ID: S204070-05							Client Sample ID: Dupli	icate
Matrix: WATER							Prep Type: Tota	I/NA
Analysis Batch: 8611							Prep Batch: 861	11_P
	Sample	Sample	Duplicate	Duplicate				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limi
Radium-228	0.295		0.333	U	pCi/L			
Lab Sample ID: S204070-05							Client Sample ID: Dupli	icate
Matrix: WATER							Prep Type: Tota	ıl/NA

Analysis Batch: 8611							Prep Batch: 8	611_P
	Sample	Sample	Duplicate	Duplicate				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Gross Alpha	1.34		2.68	J	pCi/L		67	
Gross Beta	4.81		5.29		pCi/L		10	

Lab Sample ID: S204070-05 **Client Sample ID: Duplicate Matrix: WATER** Prep Type: Total/NA Prep Batch: 8611 P **Analysis Batch: 8611**

7 many old Batolin out 1					op Bato.	
	Sample Sample	Duplicate	Duplicate			RPD
Analyte	Result Qualifie	er Result	Qualifier	Unit	D RI	PD Limit
Radium-226	0.266		U	nCi/l		0

QC Association Summary

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

GC/MS VOA

Analysis Batch: 19861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-7721-A-1 MS	Matrix Spike	Total/NA	Water	624	
440-7721-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
440-8620-1	Outfall 008	Total/NA	Water	624	
440-8620-2	Trip Blank	Total/NA	Water	624	
LCS 440-19861/5	Lab Control Sample	Total/NA	Water	624	
LCS 440-19861/6	Lab Control Sample	Total/NA	Water	624	
MB 440-19861/4	Method Blank	Total/NA	Water	624	

Analysis Batch: 20084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8620-1	Outfall 008	Total/NA	Water	624	
440-8620-2	Trip Blank	Total/NA	Water	624	
440-8626-A-3 MS	Matrix Spike	Total/NA	Water	624	
440-8626-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
LCS 440-20084/5	Lab Control Sample	Total/NA	Water	624	
MB 440-20084/4	Method Blank	Total/NA	Water	624	

GC/MS Semi VOA

Prep Batch: 19844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	525.2	
LCS 440-19844/2-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 440-19844/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MB 440-19844/1-A	Method Blank	Total/NA	Water	525.2	

Analysis Batch: 20682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method F	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	525.2	19844
LCS 440-19844/2-A	Lab Control Sample	Total/NA	Water	525.2	19844
LCSD 440-19844/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	19844
MB 440-19844/1-A	Method Blank	Total/NA	Water	525.2	19844

Prep Batch: 21041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	625	
440-8891-A-1-A MS	Matrix Spike	Total/NA	Water	625	
440-8891-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	625	
LCS 440-21041/2-A	Lab Control Sample	Total/NA	Water	625	
MB 440-21041/1-A	Method Blank	Total/NA	Water	625	

Analysis Batch: 21217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	625	21041
440-8891-A-1-A MS	Matrix Spike	Total/NA	Water	625	21041
440-8891-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	625	21041
LCS 440-21041/2-A	Lab Control Sample	Total/NA	Water	625	21041
MB 440-21041/1-A	Method Blank	Total/NA	Water	625	21041

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Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

HPLC/IC

Analysis Batch: 19543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8620-1	Outfall 008	Total/NA	Water	218.6	_
440-8626-G-3 MS	Matrix Spike	Total/NA	Water	218.6	
440-8626-G-3 MSD	Matrix Spike Duplicate	Total/NA	Water	218.6	
LCS 440-19543/2	Lab Control Sample	Total/NA	Water	218.6	
MB 440-19543/3	Method Blank	Total/NA	Water	218.6	

Analysis Batch: 19784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8670-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-8670-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-8693-1	Outfall 008 composite	Total/NA	Water	300.0	
LCS 440-19784/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-19784/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 19785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8670-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-8670-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-8693-1	Outfall 008 composite	Total/NA	Water	300.0	
LCS 440-19785/3	Lab Control Sample	Total/NA	Water	300.0	
MB 440-19785/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 20654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8689-I-1 MS	Matrix Spike	Total/NA	Water	314.0	
440-8689-I-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	
440-8693-1	Outfall 008 composite	Total/NA	Water	314.0	
LCS 440-20654/37	Lab Control Sample	Total/NA	Water	314.0	
MB 440-20654/36	Method Blank	Total/NA	Water	314.0	
MRL 440-20654/2 MRL	Lab Control Sample	Total/NA	Water	314.0	

Specialty Organics

Analysis Batch: 2114077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total	Water	1613B	
G2D230000077B	Method Blank	Total	Water	1613B	
G2D230000077C	Lab Control Sample	Total	Water	1613B	

Prep Batch: 2114077_P

Lab Sample ID 440-8693-1	Client Sample ID Outfall 008 composite	Prep Type Total	Matrix Water	Method 3542	Prep Batch
G2D230000077B	Method Blank	Total	Water	3542	
G2D230000077C	Lab Control Sample	Total	Water	3542	

Metals

Prep Batch: 20031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-G-14-B MS	Matrix Spike	Total/NA	Water	245.1	
440-8609-G-14-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
440-8693-1	Outfall 008 composite	Total/NA	Water	245.1	

QC Association Summary

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Metals (Continued)

Prep Batch: 20031 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-20031/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-20031/1-A	Method Blank	Total/NA	Water	245.1	

Prep Batch: 20049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8443-G-1-C MS	Matrix Spike	Dissolved	Water	245.1	_
440-8443-G-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	
440-8693-1	Outfall 008 composite	Dissolved	Water	245.1	
LCS 440-19679/2-C	Lab Control Sample	Dissolved	Water	245.1	
MB 440-19679/1-C	Method Blank	Dissolved	Water	245.1	

Analysis Batch: 20257

Client Sample ID	Prep Type	Matrix	Method	Prep Batch
Matrix Spike	Total/NA	Water	245.1	20031
Matrix Spike Duplicate	Total/NA	Water	245.1	20031
Outfall 008 composite	Total/NA	Water	245.1	20031
Lab Control Sample	Total/NA	Water	245.1	20031
Method Blank	Total/NA	Water	245.1	20031
	Matrix Spike Matrix Spike Duplicate Outfall 008 composite Lab Control Sample	Matrix Spike Total/NA Matrix Spike Duplicate Total/NA Outfall 008 composite Total/NA Lab Control Sample Total/NA	Matrix Spike Total/NA Water Matrix Spike Duplicate Total/NA Water Outfall 008 composite Total/NA Water Lab Control Sample Total/NA Water	Matrix Spike Total/NA Water 245.1 Matrix Spike Duplicate Total/NA Water 245.1 Outfall 008 composite Total/NA Water 245.1 Lab Control Sample Total/NA Water 245.1

Analysis Batch: 20492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	SM 2340B	

Analysis Batch: 20502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8443-G-1-C MS	Matrix Spike	Dissolved	Water	245.1	20049
440-8443-G-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	20049
440-8693-1	Outfall 008 composite	Dissolved	Water	245.1	20049
LCS 440-19679/2-C	Lab Control Sample	Dissolved	Water	245.1	20049
MB 440-19679/1-C	Method Blank	Dissolved	Water	245.1	20049

Prep Batch: 21302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-F-12-F MS	Matrix Spike	Dissolved	Water	200.2	<u> </u>
440-8609-F-12-G MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
440-8693-1	Outfall 008 composite	Dissolved	Water	200.2	
LCS 440-20065/2-C	Lab Control Sample	Dissolved	Water	200.2	
MB 440-20065/1-C	Method Blank	Dissolved	Water	200.2	

Prep Batch: 21402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total Recoverable	Water	200.2	
LCS 440-21402/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-21402/1-A	Method Blank	Total Recoverable	Water	200.2	

Prep Batch: 21438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Dissolved	Water	200.2	
440-8693-1 MS	Outfall 008 composite	Dissolved	Water	200.2	
440-8693-1 MSD	Outfall 008 composite	Dissolved	Water	200.2	
LCS 440-20333/2-E	Lab Control Sample	Dissolved	Water	200.2	
MB 440-20333/1-D	Method Blank	Dissolved	Water	200.2	

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QC Association Summary

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Metals (Continued)

Prep Batch: 21521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8409-X-1-D MS	Matrix Spike	Total Recoverable	Water	200.2	
440-8409-X-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
440-8613-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-8613-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
440-8693-1	Outfall 008 composite	Total Recoverable	Water	200.2	
LCS 440-21521/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-21521/1-A	Method Blank	Total Recoverable	Water	200.2	

Analysis Batch: 21614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8609-F-12-F MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	21302
440-8609-F-12-G MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	21302
440-8693-1	Outfall 008 composite	Dissolved	Water	200.7 Rev 4.4	21302
LCS 440-20065/2-C	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	21302
MB 440-20065/1-C	Method Blank	Dissolved	Water	200.7 Rev 4.4	21302

Analysis Batch: 21778

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8409-X-1-D MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	21521
440-8409-X-1-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	21521
440-8613-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	21521
440-8613-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	21521
440-8693-1	Outfall 008 composite	Total Recoverable	Water	200.7 Rev 4.4	21521
LCS 440-21521/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	21521
MB 440-21521/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	21521

Analysis Batch: 22326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Dissolved	Water	200.8	21438
440-8693-1 MS	Outfall 008 composite	Dissolved	Water	200.8	21438
440-8693-1 MSD	Outfall 008 composite	Dissolved	Water	200.8	21438
LCS 440-20333/2-E	Lab Control Sample	Dissolved	Water	200.8	21438
MB 440-20333/1-D	Method Blank	Dissolved	Water	200.8	21438

Analysis Batch: 22566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Dissolved	Water	200.8	21438
440-8693-1 MS	Outfall 008 composite	Dissolved	Water	200.8	21438
440-8693-1 MSD	Outfall 008 composite	Dissolved	Water	200.8	21438
LCS 440-20333/2-E	Lab Control Sample	Dissolved	Water	200.8	21438
MB 440-20333/1-D	Method Blank	Dissolved	Water	200.8	21438

Analysis Batch: 22628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total Recoverable	Water	200.8	21402
LCS 440-21402/2-A	Lab Control Sample	Total Recoverable	Water	200.8	21402
MB 440-21402/1-A	Method Blank	Total Recoverable	Water	200.8	21402

Analysis Batch: 23040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Dissolved	Water	SM 2340B	

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QC Association Summary Client: MWH Americas Inc TestAmerica Job ID: 440-8620-1 Project/Site: Annual Outfall 008 Grab **Metals (Continued)** Analysis Batch: 23052 Lab Sample ID Client Sample ID Prep Type Matrix Method Prep Batch Outfall 008 composite 440-8693-1 Water 200.7 Rev 4.4 21521 Total Recoverable **Analysis Batch: 23613** Lab Sample ID Client Sample ID Prep Type Matrix Method Prep Batch 440-8609-F-12-F MS Matrix Spike Dissolved Water 200.7 Rev 4.4 21302 440-8609-F-12-G MSD Matrix Spike Duplicate Dissolved Water 200.7 Rev 4.4 21302 440-8693-1 Outfall 008 composite Dissolved Water 200.7 Rev 4.4 21302 LCS 440-20065/2-C Dissolved 200.7 Rev 4.4 21302 Lab Control Sample Water MB 440-20065/1-C Dissolved Method Blank Water 200.7 Rev 4.4 21302 **General Chemistry** Analysis Batch: 19957 Lab Sample ID Client Sample ID Matrix Method Prep Batch Prep Type 440-8418-B-1 DU Duplicate Total/NA Water SM 2540C 440-8693-1 Outfall 008 composite Total/NA Water SM 2540C LCS 440-19957/2 Lab Control Sample Total/NA Water SM 2540C MB 440-19957/1 Total/NA Water SM 2540C Method Blank Analysis Batch: 20387 Lab Sample ID Client Sample ID Prep Type Matrix Method Prep Batch 440-8693-1 Outfall 008 composite Total/NA Water SM 4500 F C 440-8744-J-1 MS Matrix Spike Total/NA Water SM 4500 F C 440-8744-J-1 MSD Matrix Spike Duplicate Total/NA Water SM 4500 F C LCS 440-20387/9 Lab Control Sample Total/NA Water SM 4500 F C MB 440-20387/10 Method Blank Total/NA Water SM 4500 F C **Analysis Batch: 20846** Lab Sample ID Client Sample ID Prep Type Matrix Method Prep Batch 440-8596-A-1 DU Duplicate Total/NA Water SM 2540D Total/NA Water SM 2540D 440-8693-1 Outfall 008 composite LCS 440-20846/2 Lab Control Sample Total/NA Water SM 2540D MB 440-20846/1 Method Blank Total/NA Water SM 2540D Prep Batch: 22035 Lab Sample ID Client Sample ID Prep Type Matrix Method Prep Batch 440-8620-1 Outfall 008 Total/NA 1664A Water LCS 440-22035/2-A Lab Control Sample Total/NA 1664A Water LCSD 440-22035/3-A Lab Control Sample Dup Total/NA Water 1664A MB 440-22035/1-A Method Blank Total/NA Water 1664A **Analysis Batch: 22042**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8620-1	Outfall 008	Total/NA	Water	1664A	22035
LCS 440-22035/2-A	Lab Control Sample	Total/NA	Water	1664A	22035
LCSD 440-22035/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	22035
MB 440-22035/1-A	Method Blank	Total/NA	Water	1664A	22035

Prep Batch: 22248

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	Distill/CN	
440-9403-A-1-A MS	Matrix Spike	Total/NA	Water	Distill/CN	

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

General Chemistry (Continued)

Prep Batch: 22248 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-9403-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
LCS 440-22248/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-22248/1-A	Method Blank	Total/NA	Water	Distill/CN	

Prep Batch: 22259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	SM 4500 NH3 B	
440-8694-M-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 B	
440-8694-M-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 B	
LCS 440-22259/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 440-22259/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 22271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	SM 4500 NH3 C	22259
440-8694-M-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 C	22259
440-8694-M-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 C	22259
LCS 440-22259/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 C	22259
MB 440-22259/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 C	22259

Analysis Batch: 22273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	SM 4500 CN E	22248
440-9403-A-1-A MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	22248
440-9403-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	22248
LCS 440-22248/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	22248
MB 440-22248/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	22248

Biology

Analysis Batch: 20001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8620-1	Outfall 008	Total/NA	Water	SM 9221E	

Analysis Batch: 20003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8620-1	Outfall 008	Total/NA	Water	SM 9221F	

Subcontract

Analysis Batch: 8611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	Gamma Spec	8611_P
				K-40 CS-137	
440-8693-1	Outfall 008 composite	Total/NA	Water	Gross Alpha	8611_P
				and Beta	
440-8693-1	Outfall 008 composite	Total/NA	Water	Radium 226	8611_P
440-8693-1	Outfall 008 composite	Total/NA	Water	Radium 228	8611_P
440-8693-1	Outfall 008 composite	Total/NA	Water	Strontium 90	8611_P
440-8693-1	Outfall 008 composite	Total/NA	Water	Tritium	8611_P
440-8693-1	Outfall 008 composite	Total/NA	Water	Uranium,	8611_P
				Combined	

QC Association Summary

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Subcontract (Continued)

Analysis Batch: 8611 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
S204070-03	Lab Control Sample	Total/NA	WATER	Gross Alpha	8611_P
				and Beta	
S204070-04	Method Blank	Total/NA	WATER	Gross Alpha	8611_P
				and Beta	
S204070-05	Duplicate	Total/NA	WATER	Gross Alpha	8611_P
				and Beta	

Analysis Batch: 150453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	Asbestos	150453_P
BLANK	BLANK	Total/NA	WATER	Asbestos	150453_P

Prep Batch: 8611_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Ba	tch
440-8693-1	Outfall 008 composite	Total/NA	Water	General Prep	
S204070-03	Lab Control Sample	Total/NA	WATER	General Prep	
S204070-04	Method Blank	Total/NA	WATER	General Prep	
S204070-05	Duplicate	Total/NA	WATER	General Prep	

Prep Batch: 150453_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-8693-1	Outfall 008 composite	Total/NA	Water	NA	
BLANK	BLANK	Total/NA	WATER	NA	

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Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
AY	Matrix Interference suspected
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Semi VOA

Qualifier	Qualifier Description
LQ	LCS/LCSD recovery above method control limits
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
AY	Matrix Interference suspected
RA	RPD exceeds limits due to matrix interference. % recoveries were within limits
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
LIBL OILO	

HPLC/IC

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

DIOXIN

Qualifier	Qualifier Description
J	Estimated result. Result is less than the reporting limit.
Q	Estimated maximum possible concentration (EMPC).
В	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	
BB	Sample > 4X spike concentration	
MB	Analyte present in the method blank	

General Chemistry

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

Subcontract

Qı	ıalifier	Qualifier Description
Ū		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)			

Definitions/Glossary

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

Glossary (Continued)

Abbreviation

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

TEQ

Toxicity Equivalent Quotient (Dioxin)

Client: MWH Americas Inc

Project/Site: Annual Outfall 008 Grab

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	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

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.

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DATE:

April 26, 2012

CUSTOMER:

Test America-Irvine

17461 Derian Avenue, Suite 100

Irvine, CA 92614

ATTENTION:

Debby Wilson

REPORT NO:

150453

REFERENCE:

COC# 440-3989.1 JOB# 440-8693-1

SUBJECT:

ANALYSIS OF WATER SAMPLES FOR ASBESTOS BY TEM

ACCREDITATION:

California Dept. of Health Services ELAP 1119

The date and times of collection, UV-Ozone Treatment and filtration are as follows:

SAMPLE NO:

Outfall 008 (440-8693-1)

DATE COLLECTED:

April 13, 2012 at 1855

RECEIVED:

April 17, 2012 at 1205

UV-Ozone Treatment:

April 17, 2012 1215 - 1515

FILTERED:

April 17, 2012 at 1532

DATE ANALYZED:

April 23, 2012

In the drinking water document, EPA 600 R 94 134, 100.2, samples are analyzed for fibers >10 um in length. The regulation calls for an MCL (maximum contaminant level) of 7 MFL (million of fibers per liter) and an analytical sensitivity of 0.2 MFL.

The analytical sensitivity of 6.8 MFL was reached due to the turbidity in the sample. An additional six grid openings were analyzed to reach the analytical sensitivity.

The results of the analysis and the detection limit(s) are summarized on the following page(s), accompanied by the chain of custody.

Respectfully submitted, EMS Laboratories, Inc.

13 mKyl

B.M. Kolk Laboratory Director BMK/am

Note: The report shall not be reproduced, except in full without the written approval of EMS Laboratories, Inc.

Note: The results of the analysis are based upon the sample submitted to the laboratory. No representation is made regarding the sampling area other than that implied by the analytical results for the immediate vicinity of the samples analyzed as calculated from the data presented with those samples. All the analytical quality control data meet the requirement of the procedure unless otherwise indicated. Any deviation or exclusion from the test method is noted in this cover letter. Unless otherwise noted in this cover letter the samples were received properly packaged, clearly identified and intact.

ANALYSIS OF WATER FOR ASBESTOS BY TEM (EPA-600 R 94 134) EPA 100.2

LAB.NO.

150453

CLIENT:

Test America, Irvine

		FILTER I	MEDIA DATA				
Laboratory	Client	Туре	Diameter	Effective Area	No. of G.O.	Analyzed	Sample
I.D.	I.D.		mm	mm ²		Area, mm²	Volume (mL)
150453-1	Outfall 008	PC	47	1017	16	0.150	1
	(440-8693-1)			- T			
						1	
4-17-12-BL	EMS Blank	PC	47	1017	20	0.188	500
				+			

						-	

^{*} FOR FIBERS > 10µm ONLY

INDIVIDUAL ANALYTICAL RESULTS

Laboratory	Client	No of	Detection	Concentration MFL
I.D.	1.D.	Asbestos Fibers	Limit (MF/L)	Fibers >10 µm
150453-1	Outfall 008	ND	6.8	< 6.8
	(440-8693-1)			
4-17-12-BL	EMS Blank	ND ND	0.01	< 0.01

			****	1

The analysis was carried out to the approved TEM method. This laboratory is in compliance with the quality specified by the method.

Authorized Signature

NA Not Applicable ND None Detected PC Polycarbonate Filter GO Grid Openings

MFL Million Fibers per Liter

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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
 EMSL Order ID: 371205916

 17461 Derian Avenue Suite 100
 Date Received: 4/17/2012

 Irvine , CA 92614
 Date Analyzed: 4/17/2012

 Attn. Debby Wilson
 Date Reported: 4/20/2012

Project: 44002624/Annual Outfall 008 Grab - Boeing SSFL 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	Sample Date and Time	Amount Received	Amount Sampled	CEs /100 mL
5916-1	Outfall 008 Grab (440-8620-1)	4/13/12 15:30 Pacific		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

Quar L:

Quanyi "Charlie" Li, Ph.D. Director, PCR and DNA Analysis Lab

LABORATORY REPORT

Date:

April 18, 2012

Client:

Test America - Irvine

17461 Derian Ave., Suite 100

Irvine, CA 92614 Attn: Debby Wilson



"dedicated to providing quality aquatic toxicity testing"

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

Laboratory No.:

A-12041306-001

Job No.:

440-8620-1

Sample ID.:

Outfall 008 (440-8620-1)

Sample Control:

The sample was received by ATL in a chilled state, within the recommended hold time and with the chain of custody record attached. Temperature acceptable as

sample was received directly from field.

Date Sampled:

04/13/12

Date Received:

04/13/12

Temp. Received:

8.5°C

Chlorine (TRC):

 $0.0 \, \text{mg/l}$

Date Tested:

04/14/12 to 04/18/12

Sample Analysis:

The following analyses were performed on your sample:

Fathead Minnow 96hr Percent Survival Bioassay (EPA Method 2000.0).

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

Result Summary:

Sample ID.

Results

Outfall 008 (404-8620-1)

100% Survival (TUa = 0.0)

Quality Control:

Reviewed and approved by:

Joseph A. LeMay Laboratory Director

FATHEAD MINNOW PERCENT SURVIVAL TEST EPA Method 2000.0



Lab No.: A-12041306-001

Client/ID: TestAmerica Outfall 008

440-8620-1

Start Date: 04/14/2012

TEST SUMMARY

Species: Pimephales promelas.

Age: 14 (1-14) days. Regulations: NPDES.

Test solution volume: 250 ml. Feeding: prior to renewal at 48 hrs.

Number of replicates: 2.

Control water: Moderately hard reconstituted water.

Photoperiod: 16/8 hrs light/dark.

Source: In-laboratory Culture. Test type: Static-Renewal.

Test Protocol: EPA-821-R-02-012. Endpoints: Percent Survival at 96 hrs.

Test chamber: 600 ml beakers. Temperature: 20 +/- 1°C.

Number of fish per chamber: 10.

QA/QC No.: RT-120403.

TEST DATA

	-		LSI DATA	<u> </u>			
		°C	DO	pН	# D	ead B	Analyst & Time of Readings
INITIAL	Control	19-2	9-6	8-2	0	0	1000
24 Hr	Control	19.3	85	8.0 7.7	0	0	1100
48 Hr	Control	19.4	7.4 7-7	7.9 7.7	0	0	h
Renewal	Control	19.7	7-9	8.0 7.6	0	00	Jovo
72 Hr	Control	19.4	7.7	7. 8 7. 6	0	0	1000
96 Hr	Control	19-8 19-9	7.4	7-9	0	0	1000

Comments:

Sample as received: Chlorine: 0.0 mg/l; pH: \(\frac{1}{2} \begin{align*} \text{Conductivity: } \frac{\delta}{2} \) umho; Temp: 8.5°C; \(\text{DO: } \frac{\delta}{2} \) mg/l; Alkalinity: \(\frac{\delta}{2} \) mg/l; Hardness: \(\frac{\delta}{2} \) mg/l; NH₃-N: \(\frac{\delta}{2} \) mg/l. \(\text{Sample aerated moderately (approx. 500 ml/min) to raise or lower DO? Yes // No.)

Control: Alkalinity: 65 mg/l; Hardness: 95 mg/l; Conductivity: 339 umho. Test solution aerated (not to exceed 100 bubbles/min) to maintain DO >4.0 mg/l? Yes //No.

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

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

RESULTS

100% Sample: _/(/7) Percent Survival In: Control:

Il follow and are to be added to this work order. Turn-around time: (Check) 24 Hour: 10 Day: 10 Day: 48 Hour: 5 Day: Nomal: X Sample Integrity: (Check) Intact: On Ice: X Data Requirements: (Check) No Level IV: NPDES Level IV: X	72 Hour: 5 Day: On Ice:	follow and are to b Turn-around time: (Check) 24 Hour: 48 Hour: Kemple Integrity: (Check) Intact: Data Requirements: (Check) No Level IV:	I follow and are to Turn-around time: (Check) 24 Hour: 48 Hour: Sample Integrity: (Check) Intact: Data Requirements: (Check			Date/Time: Date/Time: Date/Time: Date/Time: Date/Time: U-/S-1	L Comp	New York	M D	Received By Received By	These Samples are the Grab Portion of Outfall 008 for this storm event. Date/Time: 4-/3-26/2 Received By Date/Time: 5:45 Particular Security By Date/Time: 5:30 pvn Received By	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Date/Time: 45 Date/Time: 45 Date/Time: 45 Date/Time: 45	Date/I	Imples a	Mun Man San San San San San San San San San S	Relinquished By Relingtished By Relingtished By Relinquished By
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						×	<u> </u>			6	None		-	0y 1	500 mL Poly	8	Outfall 008
							×			5A, 5B, 5C	None			ω	VOAs	٧	Trip Blanks
								×		4A, 4B, 4C	HCI			ω ω	VOAs	8	Trip Blanks
							×			3A, 3B, 3C	None			3	VOAs	٧	Outfall 008
								×		2A, 2B, 2C	НСІ			ω	VOAs	8	Outfall 008
									×	1A, 1B	нсі	1050 4-5-th		2	1L Amber	٤.	Outfall 008
Comments			11	Acute				VOC	Oil &	Bottle #	Preservative	Sampling Date/Time		er # of Cont.	Container Type	Sample Matrix	Sample Description
PH = 4.36 Time of readings =			ımad	Toxicity	i (SM9221)	(218.6) coliform (SM922	624 +A+A+2CV	624, Xylenes + I	Grease (1664-HE		5 4 7	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515	Phon (626) Fax 7	• •	onwyn Kel	jer: Bro	Project Manager: Bronwyn Kelly Sampler: الكسير
Temp °F = 52					<u> </u>	1)	<u> </u>	PP	M)					Vilson	: Debby V	Contact	Test America Contact: Debby Wilson
Field readings: (Log in and include in report Temp and pH)					•	•				Y	Boeing-SSFL NPDES Annual Outfall 008 GRAB Stormwater at Happy Valley	Annual Outfall 008 GRAB Stormwater at Happy	Annua GRAB Stormy		uite 200	dia a Ave, S 91007	MVVH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007
	ÆD	ANALYSIS REQUIRED	NALYSI									֡֜֝֜֝֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜֜	י וטפרו			:	Cilculation and coo

TestAmerica irvine 17461 Derlen Ave Suile 100			2) 	-			2				Test≯	[estAmerica	Ω
Irvine, CA 92614-5617 Phone (949) 261-1022 Fax (949) 260-3297			9	Chaill of Custous Necoto	000	o dy	6001					THE LEADER IN E	THE LUADUR IN EMPIROSMENTAL TEGRINO	E I
	Sampler			Villson,	Lati PM: Wilson, Debby				Carrier Tracking No(s):	(e)		000 No:		
Client Contact Shipping/Receiving	Phone:			E-Mail.	E-Msil. debby, wilson@testamericainc.com	sternericai	NC.COM					Page 1 of 1		
							Analysis	s Requested	ested			Job ft: 440-8620-1		
	Due Data Requested: 4/27/2012						_					8	ies;	
	TAT Requested (days):	Ÿ										G - Za Acelata	N - None O - AsiNeO2	
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Email	#O#:				5							J-ION J-Di Water	U-Aosinne V-NICAA	
Preject Name: Amnual Outfati 008 Grab	Project &: 44002824											L.EDA	W-ph 4-5 Z-other (specify)	
	SSOW#:			Saut							bb-i	Other:		
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REFERENCE TOXICANT DATA

FATHEAD MINNOW ACUTE Reference Toxicant - SDS



QA/QC Batch No.: RT-120403

TEST SUMMARY

Species: Pimephales promelas.

Age: 14 days old. Regulations: NPDES.

Test chamber volume: 250 ml. Feeding: Prior to renewal at 48 hrs.

Temperature: 20 +/- 1°C. Number of replicates: 2. Dilution water: MHSF. Source: In-lab culture.

Test type: Static-Renewal.

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

Endpoints: LC50 at 96 hrs. Test chamber: 600 ml beakers.

Aeration: None.

Number of organisms per chamber: 10. Photoperiod: 16/8 hrs light/dark.

TEST DATA

										· · · · · · · · · · · · · · · · · · ·	_		
		INITIA	L			24 Hr					48 Hr		
Date/Time:	4-2-	ル	リフぃ	4-4	-1)		//	30	4-5-	12		1130	
Analyst:			v			Ź	2				7	7	
-	°C	DO	pН	°C	DO	pН	# D	ead	°C	DO	pН	# 0	ead
			pri			pii	A	В			pii	А	В
Control	20.1	8.4	8.0	19.8	8.2	7.9	U	U	19.7	8. ⊋	7.9	0	0
1.0 mg/l	19.9	8.5	7.9	198	8.2	7.9	U	6	14.6	8.1	7.7	\mathcal{C}	0
2.0 mg/l	19.8	8.6	8.0	19.8	8.1	7.9	U	O	19.7	7. 9	7.9	0	0
4.0 mg/l	(9. 7	8.8	8.0	19.8	8:2	7.9	\mathcal{O}	0	19.7	7. 8	7.9	1	O
8.0 mg/l	(9.7	8.7	8.0	14.8	8.1	7.8	(0	10	,	_	1	/	
16.0 mg/l	(9.8	8.8	8.1	19.8	7.2	26	lo	lv	_	_	-	-	_

	R	ENEWA	\L			72 Hr					96 Hr		
Date/Time:	4-5	-12	1132	4-6-	12		//30		4-7	-/2		(/	130
Analyst:		1	?				2				7		
	°C	DO	pН	°C	DO	pН	# D	ead	~C	DO	all	# D	ead
			pm		БО	pii	A	В		DO	pН	A	В
Control	19.2	6.5	8.2	19.6	7. 5	8.0	\bigcap	0	19.5	7.6	7.8	0	0
1.0 mg/l	19.6	6.8	8.1	17. 6	18	7. 9	B	0	19.4	7.8	7.8	0	C
2.0 mg/l	19.7	6.9	8. O	14.5	8.0	8.0	0	0	19.4	7. 7	7.8	U	0
4.0 mg/l	19-7	6.9	8.0	146	8.1	7.9	0	0	19.4	8.0	7.8	0	1
8.0 mg/l	1	1	,	1	1	1	,	,	,	1	1	/	+
16.0 mg/l	-	į	-	_	-	-)	-	_	_	/		-

Comments: Control: Alkalinity: 6 8 mg/l; Hardness: 9 mg/l; Conductivity: 327 umho. SDS: Alkalinity: 41 mg/l; Hardness: 93 mg/l; Conductivity: 331 umho.

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

Yes (response curve normal)

No (dose interrupted indicated or non-normal)

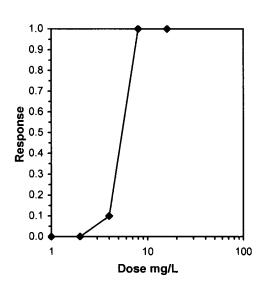
				Acute Fis	h Test-96 I	Hr Survival	
Start Date:	4/3/2012	11:30	Test ID:	RT120403		Sample ID:	REF-Ref Toxicant
End Date:	4/7/2012	11:30	Lab ID:	CAATL-Aquatic To	esting Labs	Sample Type:	SDS-Sodium dodecyl sulfate
Sample Date: Comments:	4/3/2012		Protocol	ACUTE-EPA-821-	R-02-012	Test Species:	PP-Pimephales promelas
Conc-mg/L	1	2					
D-Control	1.0000	1.0000					
1	1.0000	1.0000					
2	1.0000	1.0000					
4	0.9000	0.9000					
8	0.0000	0.0000					
16	0.0000	0.0000					

		_	Tra	ansform:	Arcsin Sc	uare Roo	t	Number Total
Conc-mg/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Resp Number
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0 20
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0 20
2	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0 20
4	0.9000	0.9000	1.2490	1.2490	1.2490	0.000	2	2 20
8	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20 20
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20 20

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

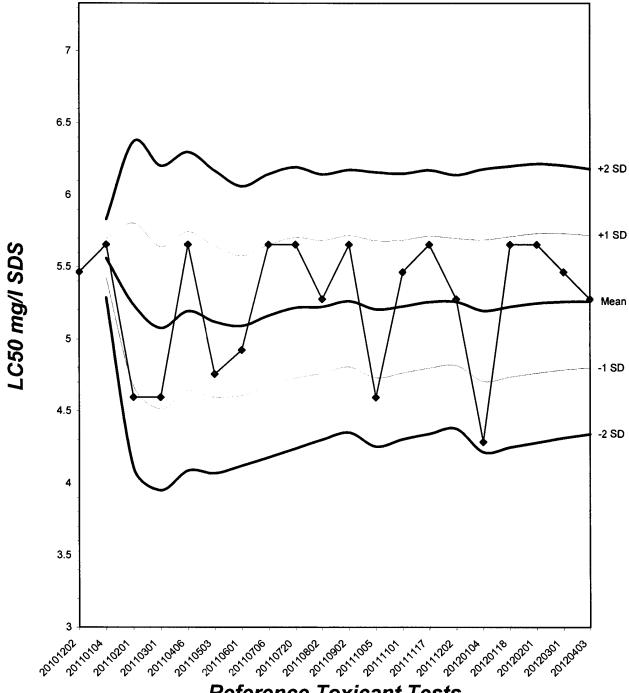
Equality of variance cannot be confirmed

<u> </u>		,		Trimmed Spearman-Karber
Trim Leve	EC50	95%	CL	·
0.0	% 5.2780	4.8093	5.7924	
5.0	% 5.3968	4.8053	6.0611	
10.0	% 5.4432	5.1395	5.7648	1.0 —
20.0	% 5.4432	5.1395	5.7648	4
Auto-0.0	% 5.2780	4.8093	5.7924	0.9

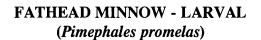


Fathead Minnow Acute Laboratory **Control Chart**





TEST ORGANISM LOG





QA/QC BATCH NO.: RT 120403
SOURCE: In-Lab Culture
DATE HATCHED: 3-20-12
APPROXIMATE QUANTITY:
GENERAL APPEARANCE:
MORTALITIES 48 HOURS PRIOR TO TO USE IN TESTING:

AVERAGE FISH WEIGHT: 0.000 gm

DATE USED IN LAB:

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

413112

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

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

200 ml test solution volume = 0.013 gm mean fish weight limit @ 20°C; 0.008 @ 25°C 250 ml test solution volume = 0.016 gm mean fish weight limit @ 20°C; 0.010 @ 25°C

ACCLIMATION WATER QUALITY:

Temp.: <u>20 | °C</u> pH: <u>8-0</u> Ammonia: <u>40.1 mg/l NH</u>₃-N

DO: 8-4 mg/l Alkalinity: 68 mg/l Hardness: 93 mg/l

READINGS RECORDED BY:

DATE: 4-4-12

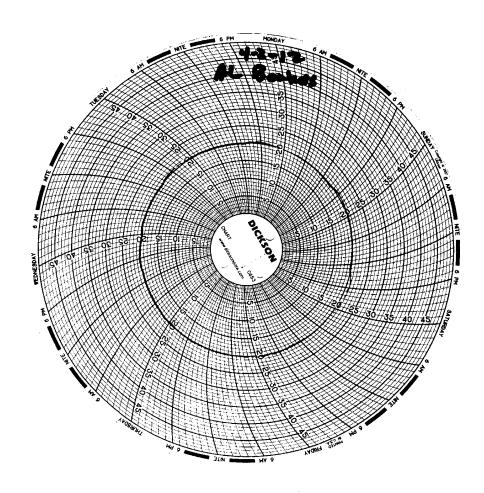


Test Temperature Chart

Test No: RT-120403

Date Tested: 04/03/12 to 04/07/06

Acceptable Range: 20+/- 1°C





Toll Free (800) 841-5487

www.eberlineservices.com



May 9, 2012

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

Reference:

Test America-Irvine 44002624

Eberline Analytical Report S204069-8611

Sample Delivery Group 8611

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Project No. 44002624. The sample was received on April 17, 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 8611 consists of the analytical results and supporting documentation for one water sample. Sample ID and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

Tritium and gamma analyses were performed on the 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.

For QC purposes sample OUTFALL008 (440-8693-1) was batched with other Boeing OUTFALL samples. The duplicate analysis reported herein was a duplicate analysis of sample OUTFALL002 (440-8694-1).

3.0 Method Errors

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

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

Test America Project No. 44002624

Case Narrative, page 2

May 9, 2012

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."

Joseph Verville

Client Services Manager

2/1/

Date

SDG <u>8611</u>
Contact <u>Joseph Verville</u>

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

SUMMARY DATA SECTION

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Prepared by

Reviewed by

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-TOC
Version 3.06
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SDG 8611

SDG <u>8611</u>

Contact Joseph Verville

REPORT GUIDE

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

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

REPORT GUIDES
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Version <u>Ver 1.0</u>
Form <u>DVD-RG</u>
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Report date <u>05/09/12</u>

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SDG 8611
Contact Joseph Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

ABOUT THE DATA SUMMARY SECTION

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

REPORT GUIDES
Page 2
SUMMARY DATA SECTION
Page 2

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SDG 8611

SDG <u>8611</u>
Contact <u>Joseph Verville</u>

LAB SAMPLE SUMMARY

Client <u>Test America, Inc.</u>
Contract <u>44002624</u>

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF	COLLECTED
S204069-01	OUTFALL 008 (440-8693-1)	Boeing-SSFL	WATER			440-4024.1	04/13/12 18:55
S204070-03	Lab Control Sample		WATER				
S204070-04	Method Blank		WATER				
S204070-05	Duplicate (S204070-01)	Boeing-SSFL	WATER				04/13/12 17:54

Lab id <u>EAS</u>
Protocol <u>TA</u>

Version <u>Ver 1.0</u>

Form DVD-LS
Version 3.06

Report date <u>05/09/12</u>

LAB SUMMÄRY

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SUMMARY DATA SECTION

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SDG 8611

SDG 8611 Contact Joseph Verville

QC SUMMARY

Client Test America, Inc.

Contract <u>44002624</u>

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX I	% SAMPLE		DAYS S		LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8611	440-4024.1	OUTFALL 008 (440-8693-1)	WATER	10.0 I	i	04/17/12	4	S204069-01	8611-001
8612		Method Blank	WATER					S204070-04	8612-004
		Lab Control Sample	WATER					S204070-03	8612-003
		Duplicate (S204070-01)	WATER	10.0 1	ı	04/17/12	4	S204070-05	8612-005

Lab id EAS Protocol <u>TA</u> Version Ver 1.0

Form DVD-QS

Version 3.06

Report date <u>05/09/12</u>

QC SUMMARY Page 1 SUMMARY DATA SECTION Page 4

SDG 8611

SDG	8611
Contact	Joseph Verville

PREP BATCH SUMMARY

Client <u>Test America, Inc.</u>
Contract <u>44002624</u>

			PREPARATION		PLANCHETS ANALYZED						
TEST	MATRIX	METHOD	ватсн	2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG MS/ORIG	FIERS
Beta	Counting										
AC	WATER	Radium-228 in Water	7271-144	10.4	1			1	1	1/0/1	
SR	WATER	Strontium-90 in Water	7271-144	10.4	1			1	1	1/0/1	
Gas F	roportion	al Counting									
A08	WATER	Gross Alpha in Water	7271-144	20.6	1			1	1	1/0/1	
80B	WATER	Gross Beta in Water	7271-144	11.0	1			1	1	1/0/1	
Gamma	Spectros	сору									
GAM	WATER	Gamma Emitters in Water	7271-144	7.0	1			1	1	1/0/1	
Kinet	ic Phospho	orimetry									
U_T	WATER	Uranium, Total	7271-144		1			1	1	1/0/1	
Liqui	d Scintil	lation Counting						·			
Н	WATER	Tritium in Water	7271-144	10.0	1			1	1	1/0/1	
Rador	n Counting										
RA	WATER	Radium-226 in Water	7271-144	16.4	1			1	1	1/0/1	

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

PREP BATCH SUMMARY
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SDG 8611
Contact Joseph Verville

LAB WORK SUMMARY

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

Contract <u>44002624</u>

LAB SAMPLE COLLECTED	CLIENT SAMPLE ID	MATRIX	DI ANGUERI	was are	SUF-	ANAL VEED	DEVIEWED	ву	METHOD
RECEIVED	CUSTODY SAS no		PLANCHET	TEST	FIA	ANALYZED	REVIEWED	ы	METHOD
S204069-01	OUTFALL 008 (440-8693-1)		8611-001	80A/80		04/30/12	05/01/12	BW	Gross Alpha in Water
04/13/12	Boeing-SSFL	WATER	8611-001	80B/80		04/30/12	05/01/12	BW	Gross Beta in Water
04/17/12	440-4024.1		8611-001	AC		04/30/12	05/01/12	BW	Radium-228 in Water
			8611-001	GAM		04/26/12	05/02/12	MWT	Gamma Emitters in Water
			8611-001	Н		04/19/12	04/24/12	BW	Tritium in Water
			8611-001	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8611-001	SR		04/26/12	04/27/12	MWT	Strontium-90 in Water
			8611-001	U_T		04/27/12	04/27/12	TSC	Uranium, Total
S204070-03	Lab Control Sample		8612-003	8 0A/80		05/03/12	05/03/12	BW	Gross Alpha in Water
		WATER	8612-003	80B/80		05/03/12	05/03/12	BW	Gross Beta in Water
			8612-003	AC		04/30/12	05/01/12	вw	Radium-228 in Water
			8612-003	GAM		04/26/12	05/02/12	MWT	Gamma Emitters in Water
			8612-003	H		04/19/12	04/24/12	BW	Tritium in Water
			8612-003	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8612-003	SR		04/26/12	05/01/12	вw	Strontium-90 in Water
			8612-003	υ_T		04/27/12	04/27/12	TSC	Uranium, Total
S204070-04	Method Blank		8612-004	80A/80		04/30/12	05/03/12	BW	Gross Alpha in Water
		WATER	8612-004	80B/80		04/30/12	05/03/12	BW	Gross Beta in Water
			8612-004	AC		04/30/12	05/01/12	BW	Radium-228 in Water
			8612-004	GAM		04/27/12	05/02/12	MWT	Gamma Emitters in Water
			8612-004	Н		04/19/12	04/24/12	BW	Tritium in Water
			8612-004	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8612-004	SR		04/26/12	05/01/12	BW	Strontium-90 in Water
			8612-004	U_T		04/27/12	04/27/12	TSC	Uranium, Total
S204070-05	Duplicate (S204070-01)		8612-005	80A/80		04/30/12	05/03/12	BW	Gross Alpha in Water
04/13/12	Boeing-SSFL	WATER	8612-005	80B/80		04/30/12	05/03/12	BW	Gross Beta in Water
04/17/12			8612-005	AC		04/30/12	05/01/12	BW	Radium-228 in Water
			8612-005	GAM		04/27/12	05/02/12	MWT	Gamma Emitters in Water
			8612-005	Н		04/19/12	04/24/12	BW	Tritium in Water
			8612-005	RA		05/04/12	05/07/12	BW	Radium-226 in Water
			8612-005	SR		04/26/12	05/01/12	BW	Strontium-90 in Water
			8612-005	U_T		04/27/12	04/27/12	TSC	Uranium, Total

WORK SUMMARY

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SDG 8611

SDG <u>8611</u>
Contact <u>Joseph Verville</u>

WORK SUMMARY, cont.

Client <u>Test America, Inc.</u>
Contract <u>44002624</u>

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

WORK SUMMARY $\begin{tabular}{ll} Page & 2 \\ \hline SUMMARY & DATA & SECTION \\ \hline Page & 7 \\ \end{tabular}$

 Lab id
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8612-004

METHOD BLANK

Method Blank

	8611 Joseph Verville		Test America, 44002624	Inc.
Lab sample id		Client sample id		
Dept sample id		Material/Matrix		WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	-0.192	0.30	0.606	3.00	U	80A
Gross Beta	12587472	0.051	0.52	0.863	4.00	U	80B
Tritium	10028178	60.0	92	152	500	U	H
Radium-226	13982633	0.182	0.34	0.593	1.00	U	RA
Radium-228	15262201	-0.122	0.15	0.413	1.00	U	AC
Strontium-90	10098972	0.067	0.22	0.478	2.00	U	SR
Uranium, Total		0	0.008	0.018	1.00	U	UΤ
Potassium-40	13966002	1.73	18	32.1	25.0	U	GAM
Cesium-137	10045973	-0.940	1.7	3.07	20.0	U	GAM

QC-BLANK #81586

METHOD BLANKS
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8612-003

Dept sample id 8612-003

Lab Control Sample

WATER

Material/Matrix _____

LAB CONTROL SAMPLE

SDG 8611 Client Test America, Inc.
Contact Joseph Verville Contract 44002624

Lab sample id 5204070-03 Client sample id Lab Control Sample

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)	PROTOCOI LIMITS
Gross Alpha	40.4	4.2	1.66	3.00		80A	37.0	1.5	109	74-126	70-130
Gross Beta	32.6	2.5	2.14	4.00		80B	34.0	1.4	96	86-114	70-130
Tritium	2380	150	152	500		Н	2440	98	98	88-112	80-120
Radium-226	48.5	2.1	0.687	1.00		RA	50.1	2.0	97	83-117	80-120
Radium-228	4.73	0.45	0.385	1.00		AC	4.41	0.18	107	84-116	60-140
Strontium-90	7.84	0.41	0.174	2.00		SR	9.34	0.37	84	89-111	80-120
Uranium, Total	64.2	7.2	0.181	1.00		U_T	56.5	2.3	114	87-113	80-120
Cobalt-60	126	6.3	6.18	10.0		GAM	130	5.2	97	91-109	80-120
Cesium-137	149	7.1	9.26	20.0		GAM	147	5.9	101	91-109	80-120

QC-LCS #81585

LAB CONTROL SAMPLES

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8612-005

OUTFALL 002 (440-8694-1)

DUPLICATE

SDG 8611
Contact Joseph Verville

3.82

-0.761

19

1.8

34.2

3.22

25.0

20.0

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

Contract 44002624

DUPLICATE

ORIGINAL

44002624

Lab sample id <u>\$204070-05</u>

Dept sample id <u>8612-005</u>

Lab sample id <u>S204070-01</u>

Client sample id OUTFALL 002 (440-8694-1)

Dept sample id <u>8612-001</u>

Received 04/17/12

 Location/Matrix
 Boeing-SSFL
 WATER

 Collected/Volume
 04/13/12
 17:54
 10.0
 L

26.9

1.58

U

U

Chain of custody id 440-4025.1

DUPLICATE 2σ ERR MDA RDLQUALI-ORIGINAL 2σ ERR MDA QUALI- RPD 3σ DER pCi/L ANALYTÉ pCi/L (COUNT) pCi/L pCi/L FIERS TEST pCi/L (COUNT) FIERS 왕 TOT σ 1.26 Gross Alpha 2.68 0.94 0.940 3.00 J 80A 1.34 0.81 J 67 103 1.9 Gross Beta 5.29 0.87 1.15 4.00 80B 4.81 0.97 1.44 10 45 0.6 152 500 Н 19.4 148 0 Tritium 18.5 91 U 88 U Radium-226 0.080 0.33 0.589 1.00 U 0.266 0.35 0.587 U 0.8 Radium-228 0.333 0.17 0.404 1.00 U AC 0.295 0.15 0.382 U 0.3 Strontium-90 0.038 0.35 0.808 2.00 -0.131 0.33 0.835 0.7 Uranium, Total 0.183 0.018 0.018 25 0.8 0.021 1.00 J $\mathtt{U}_{-}\mathtt{T}$ 0.172 0.020 J 6

U

U

GAM

GAM

-4.54

0.152

15

1.3

QC-DUP#1 81587

Potassium-40

Cesium-137

Protocol TA

Version Ver 1.0

Form DVD-DUP
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DUPLICATES

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OUTFALL 008 (440-8693-1)

DATA SHEET

Client <u>Test America</u>, <u>Inc</u>. SDG 8611 Contact Joseph Verville Contract <u>44002624</u>

Lab sample id <u>S204069-01</u> Dept sample id 8611-001

8611-001

Received <u>04/17/12</u>

Client sample id OUTFALL 008 (440-8693-1) WATER Location/Matrix Boeing-SSFL

Collected/Volume 04/13/12 18:55 10.0 L

Chain of custody id 440-4024.1

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	1.32	0.66	1.00	3.00	J	80A
Gross Beta	12587472	5.44	0.84	1.12	4.00		80B
Tritium	10028178	-4.64	90	153	500	U	H
Radium-226	13982633	0.234	0.40	0.675	1.00	U	RA
Radium-228	15262201	0.699	0.18	0.395	1.00	J	AC
Strontium-90	10098972	-0.049	0.44	1.06	2.00	U	SR
Uranium, Total		0.642	0.069	0.018	1.00	J	UТ
Potassium-40	13966002	-7.82	37	66.2	25.0	U	GAM
Cesium-137	10045973	0.091	2.6	4.54	20.0	U	GAM

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Test <u>AC</u> Matrix <u>WATER</u>

SDG <u>8611</u>

Contact <u>Joseph Verville</u>

LAB METHOD SUMMARY

RADIUM-228 IN WATER BETA COUNTING Client Test America, Inc.
Contract 44002624

RESULTS

AB RAW SUF-

SAMPLE ID T	EST FIX PLANCHET	CLIENT SAMPLE ID	Radium-228
Preparation b	eatch 7271-144		
S204069-01	8611-001	OUTFALL 008 (440-8693-1)	0.699 J
S204070-03	8612-003	Lab Control Sample	ok
S204070-04	8612-004	Method Blank	U
S204070-05	8612-005	Duplicate (S204070-01)	- U
	es and limits from m		1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD	EFF %	COUNT min			PREPARED	ANAL- YZED	DETECTOR
Preparation	a batch 7271-144 2σ prep error 10	.4 % Re:	ference	Lab N	ot ebo ol	c No.	7271	pg.01	2				
S204069-01	OUTFALL 008 (440-8693-1)	0.395	1.80			78		150		17	04/30/12	04/30	GRB-232
S204070-03	Lab Control Sample	0.385	1.80			78		150			04/30/12	04/30	GRB-223
S204070-04	Method Blank	0.413	1.80			81		150			04/30/12	04/30	GRB-224
S204070-05	Duplicate (S204070-01)	0.404	1.80			83		150		17	04/30/12	04/30	GRB-229
Nominal val	ues and limits from method	1.00	1.80			30-10	5	50		 180			

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

AVERAGES ± 2 SD	MDA 0	.3 <u>99</u> ±	0.024
FOR 4 SAMPLES	YIELD 8	<u>0</u> ±	5

METHOD SUMMARIES

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Test SR Matrix WATER SDG 8611

Contact Joseph Verville

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER BETA COUNTING

Client Test America, Inc. Contract 44002624

RESULTS

S204070-04

S204070-05

RAW SUF-

Strontium-90 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Preparation batch 7271-144

S204069-01 8611-001 S204070-03

Lab Control Sample ok 8612-003 8612-004 Method Blank 8612-005 Duplicate (S204070-01)

OUTFALL 008 (440-8693-1)

Nominal values and limits from method

RDLs (pCi/L)

2.00

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METHOD PERFORMANCE

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

2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.012 Preparation batch 7271-144 13 04/26/12 04/26 GRB-223 OUTFALL 008 (440-8693-1) 1.06 0.500 93 S204069-01 Lab Control Sample 0.174 1.00 93 120 04/26/12 04/26 GRB-222 S204070-03 04/26/12 04/26 GRB-224 Method Blank 88 50 S204070-04 0.478 1.00 S204070-05 Duplicate (S204070-01) 0.808 <u>0.500</u> 85 50 13 04/26/12 04/26 GRB-229 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

 $MDA = 0.630 \pm 0.773$ AVERAGES ± 2 SD FOR 4 SAMPLES YIELD 90 ± 8

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Test 80A Matrix WATER
SDG 8611

Contact Joseph Verville

LAB METHOD SUMMARY

GROSS ALPHA IN WATER
GAS PROPORTIONAL COUNTING

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

Contract 44002624

RESULTS

AB RAW SUF-

SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation	batch 727	1-144		
S204069-01	80	8611-001	OUTFALL 008 (440-8693-1)	1.32 J
S204070-03	80	8612-003	Lab Control Sample	ok
S204070-04	80	8612-004	Method Blank	U
S204070-05	80	8612-005	Duplicate (S204070-01)	ok J

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	RESID mg	EFF %		FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 727	1-144 2 σ prep error 20	.6 % Re	eference	Lab N	Noteboo	k No.	7271	pg.012	2				
S204069-01	80	OUTFALL 008 (440-8693-1)	1.00	0.220			75		400		17	04/26/12	04/30	GRB-104
S204070-03	80	Lab Control Sample	1.66	0.300			61		100			04/26/12	05/03	GRB-214
S204070-04	80	Method Blank	0.606	0.300			63		400			04/26/12	04/30	GRB-112
S204070-05	80	Duplicate (S204070-01)	0.940	0.220			93		400		17	04/26/12	04/30	GRB-109
Nominal val	ues and li	mits from method	3.00	0.300			0-25	0	100		180			

PROCEDURES REFERENCE 900.0

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

AVERAGES ± 2 SD MDA 1.05 ± 0.882
FOR 4 SAMPLES RESIDUE 73 ± 29

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Test <u>80B</u> Matrix <u>WATER</u>
SDG <u>8611</u>

Contact Joseph Verville

LAB METHOD SUMMARY

Client <u>Test America</u>, <u>Inc.</u> Contract <u>44002624</u>

GROSS BETA IN WATER
GAS PROPORTIONAL COUNTING

RESULTS

AB RAW SUF-

SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Gross Beta Preparation batch 7271-144 S204069-01 80 8611-001 OUTFALL 008 (440-8693-1) 5.44 Lab Control Sample S204070-03 80 ok 8612-003 S204070-04 80 8612-004 Method Blank U Duplicate (S204070-01) S204070-05 80 8612-005 ok Nominal values and limits from method RDLs (pCi/L) 4.00

METHOD PERFORMANCE

LAB RAW SUF-MDA ALIQ PREP DILU- RESID EFF COUNT FWHM DRIFT DAYS ANAL-SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % min keV KeV HELD PREPARED YZED DETECTOR mq 2σ prep error 11.0 % Reference Lab Notebook No. 7271 pg.012 Preparation batch 7271-144 75 17 04/26/12 04/30 GRB-104 OUTFALL 008 (440-8693-1) 1.12 <u>0.220</u> 400 S204069-01 80 2.14 0.300 100 04/26/12 05/03 GRB-214 S204070-03 80 Lab Control Sample 04/26/12 04/30 GRB-112 S204070-04 80 Method Blank 0.863 0.300 63 400 S204070-05 80 Duplicate (S204070-01) 1.15 0.220 17 04/26/12 04/30 GRB-109 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 MDA 1.32 ± 1.13 FOR 4 SAMPLES RESIDUE 73 ± 29

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Test GAM Matrix WATER

SDG <u>8611</u>

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LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER
GAMMA SPECTROSCOPY

Client <u>Test America, Inc.</u>
Contract <u>44002624</u>

RESULTS

LAB SAMPLE ID	RAW SUF- TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-	137
Preparation	batch 727	1-144			······································	
S204069-01		8611-001	OUTFALL 008 (440-8693-1)		U	
S204070-03		8612-003	Lab Control Sample	ok	ok	
S204070-04		8612-004	Method Blank		U	
S204070-05		8612-005	Duplicate (S204070-01)		-	υ

METHOD PERFORMANCE

LAB	RAW SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	8	%	min	keV	KeV	HELLD	PREPARED	YZED	DETECTOR
Preparation	hatch 727	1-144 2σ prep error 7	.0 % F	Reference	Lab N	Ioteboo	k No.	7271	pg. 012	2					
S204069-01	Datem 727	OUTFALL 008 (440-8693-1)		2.00		.000200		, 2 , 1	400	•		13	04/26/12	04/26	MB, G5, 0
		•										13		•	
S204070-03		Lab Control Sample		2.00					400				04/26/12	04/26	MB,G6,0
S204070-04		Method Blank		2.00					400				04/26/12	04/27	MB,G3,0
S204070-05		Duplicate (S204070-01)		2.00					400			14	04/26/12	04/27	MB,G4,0
Nominal val	ues and li	mits from method	6.00	2.00					400			180			

PROCEDURES REFERENCE 901.1

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

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Test U T Matrix WATER SDG 8611_ Contact Joseph Verville

LAB METHOD SUMMARY

URANIUM, TOTAL KINETIC PHOSPHORIMETRY

Client Test America, Inc. Contract <u>44002624</u>

RESULTS

Uranium, LAB RAW SUF-Total SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Preparation batch 7271-144 OUTFALL 008 (440-8693-1) S204069-01 8611-001 0.642 J Lab Control Sample ok S204070-03 8612-003 S204070-04 8612-004 Method Blank U 8612-005 Duplicate (S204070-01) ok J S204070-05 Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

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

Reference Lab Notebook No. 7271 pg.012 Preparation batch 7271-144 2σ prep error 14 04/27/12 04/27 KPA-001 OUTFALL 008 (440-8693-1) 0.018 0.0200 04/27/12 04/27 KPA-001 0.181 0.0200 S204070-03 Lab Control Sample S204070-04 Method Blank 0.018 0.0200 04/27/12 04/27 KPA-001 Duplicate (S204070-01) 14 04/27/12 04/27 KPA-001 S204070-05 0.018 0.0200 Nominal values and limits from method 1.00 0.0200 180

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD $MDA = 0.059 \pm 0.163$ YIELD ____ ± ___ FOR 4 SAMPLES

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Test	H Matrix WATER
SDG	8611
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LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

RESULTS

AB RAW SUF-

SAMPLE ID TEST FI	X PLANCHET	CLIENT SAMPLE ID	Triti	um
Preparation batch 7	271-144			
S204069-01	8611-001	OUTFALL 008 (440-8693-1)	U	
S204070-03	8612-003	Lab Control Sample	ok	
S204070-04	8612-004	Method Blank	U	
S204070-05	8612-005	Duplicate (S204070-01)	_	U

METHOD PERFORMANCE

LAB	RAW SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX CLIENT SAMPLE ID	pCi/L	${f L}$	FAC	TION	૪	8	min	ke v	KeV	HELLD	PREPARED	YZED	DETECTOR
	**		****											
Preparation	batch 7271-144 2σ prep error 1	0.0 %	Reference	Lab N	lotebool	No.	7271	pg.012	2					
S204069-01	OUTFALL 008 (440-8693-1)	153	0.0100			100		150			6	04/19/12	04/19	LSC-007
S204070-03	Lab Control Sample	152	0.100			10		150				04/19/12	04/19	LSC-007
S204070-04	Method Blank	152	0.100			10		150				04/19/12	04/19	LSC-007
\$204070-05	Duplicate (S204070-01)	152	0.0100			100		150			6	04/19/12	04/19	LSC-007
														
Nominal val	ues and limits from method	500	0.0100					100			180			

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

AVERAGES ± 2 SD	MDA <u>152</u> ± <u>1.00</u>
FOR 4 SAMPLES	YIELD 55 ± 104

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Test RA Matrix WATER SDG <u>8611</u>

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LAB METHOD SUMMARY

RADIUM-226 IN WATER RADON COUNTING

Client Test America, Inc. Contract 44002624

RESULTS

RAW SUF-LAB

SAMPLE ID TEST F	IX PLANCHET	CLIENT SAMPLE ID	Radium-226
Preparation batch	7271-144		
S204069-01	8611-001	OUTFALL 008 (440-8693-1)	U
S204070-03	8612-003	Lab Control Sample	ok
S204070-04	8612-004	Method Blank	U
S204070-05	8612-005	Duplicate (S204070-01)	- U

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF- TEST FIX CLIENT SAMPLE ID	MDA pCi/L	ALIQ L		DILU- TION	%			FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch 7271-144 2σ prep error 16	.4 % Re	ference	Lab N	oteboo!	k No.	7271	pg.012	2				
S204069-01	OUTFALL 008 (440-8693-1)	0.675	0.100			100		105		21	05/04/12	05/04	RN-016
S204070-03	Lab Control Sample	0.687	0.100			100		105			05/04/12	05/04	RN-009
S204070-04	Method Blank	0.593	0.100			100		80			05/04/12	05/04	RN-010
S204070-05	Duplicate (S204070-01)	0.589	0.100			100		105		21	05/04/12	05/04	RN-015
Nominal val	ues and limits from method	1.00	0.100					100		180			

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

AVERAGES ± 2 SD $MDA = 0.636 \pm 0.104$ FOR 4 SAMPLES YIELD 100 ± 0

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SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

These qualifiers should be reviewed as follows:

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

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

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WORK SUMMARY

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

The following notes apply to this report:

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

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DATA SHEET

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

The following notes apply to this report:

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

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

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

The following qualifiers are defined by the DVD system:

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

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DATA SHEET

- $\ensuremath{\mathtt{J}}$ The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

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

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

- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

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

The following values are underlined to indicate possible problems:

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

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DATA SHEET

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

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

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LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

- 2. The error of ADDED.
- 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

This value reported for this limit is at most 999.

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

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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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SUMMARY DATA SECTION
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Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-RG</u>
Version <u>3.06</u>
Report date <u>05/09/12</u>

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SDG 8611

SDG <u>8611</u>

Contact <u>Joseph Verville</u>

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.

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REPORT GUIDES

Lab id <u>EAS</u>

Protocol <u>TA</u>

Version <u>Ver 1.0</u>

Form <u>DVD-RG</u>

Version <u>3.06</u>

Report date <u>05/09/12</u>

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SDG <u>8611</u>
Contact <u>Joseph Verville</u>

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

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.

REPORT GUIDES
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SUMMARY DATA SECTION
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Lab id EASProtocol TAVersion Ver 1.0Form Ver 1.0Version Ver 1.0Version Ver 1.0Version Ver 1.0Report date Ver 1.0

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SDG <u>8611</u>

Contact Joseph Verville

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 OC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

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

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

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

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

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

REPORT GUIDES Page 12 SUMMARY DATA SECTION Page 31

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-RG Version 3.06 Report date 05/09/12

SDG 8611

SDG <u>8611</u>
Contact <u>Joseph Verville</u>

GUIDE, cont.

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

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Lab id <u>EAS</u>

Protocol <u>TA</u>

Version <u>Ver 1.0</u>

Form <u>DVD-RG</u>

Version <u>3.06</u>

Report date <u>05/09/12</u>

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SDG 8611

SDG <u>8611</u> Contact <u>Joseph Verville</u>

GUIDE, cont.

Client <u>Test America</u>, <u>Inc.</u> Contract <u>44002624</u>

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 ' $1\div3$ ' 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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Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-RG</u>
Version <u>3.06</u>
Report date <u>05/09/12</u>

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SDG <u>8611</u>

Contact Joseph Verville

GUIDE, cont.

Client <u>Test America, Inc.</u> Contract <u>44002624</u>

METHOD SUMMARY

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

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

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

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

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Lab id EASProtocol TAVersion Ver 1.0Form Ver 1.0Version Ver 1.0Version Ver 1.0Version Ver 1.0Report date Ver 1.0

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COMPANY CRUIN **TestAmerica** N - None
N - None
O - AsNaO2
P - Na2O45
Q - Na2S03
R - Na2S2SO3
S - H2SO4
T - ISP Dodecahydrate
U - Acetone
V - MCAA
W - ph 4.5
Z - other (specify) THE LEADER IN ENVIRONMENTAL TESTING Special Instructions/Note: Months Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For Month Company Job #: 440-8693-1 Preservation Codes: C - Zn Acetale D - Nitnc Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid 66:01 Page: Page 1 of 1 COC No: 440-4024.1 I - Ice J - DI Water K - EDTA L - EDA A - HCL B - NaOH Date/Time: 82-04-069 Date/Time? Method of Shipment: 198 **Analysis Requested** Sooler Temperature(s) °C and Other Remarks. Special Instructions/QC Requirements: SUBCONTRACT/ Gâmma Spec K-40 CS-137 Chain of Custody Record × SUBCONTRACT/ Uranium, Combined E-Maii: |debby.wilson@testamericainc.com × × Received by: × × SUBCONTRACT/ Gross Beta Lab PM: Wilson, Debby × Time: Matrix Water Company Company Sompany Type (C=comp, Sample G=grab) (0) Sample 18:55 Pacific Date: Due Date Requested: 4/30/2012 TAT Requested (days): Date/Time: Sample Date 4/13/12 Project #: 44002624 SSOW#: Date/Time: Date/Time Sampler Phone: :# OM PO#: Client Information (Sub Contract Lab) Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify) Custody Seals Intact: Custody Seal No. Sample Identification - Client ID (Lab ID) FEDER Phone (949) 261-1022 Fax (949) 260-3297 Possible Hazard Identification TestAmerica Irvine 17461 Derian Ave Suite 100 Empty Kit Relinquished by: Outfall 008 (440-8693-1) Irvine, CA 92614-5817 2030 Wright Avenue, Shipping/Receiving Annual Outfall 008 Company: Eberline Services Boeing SSFL Relinguierred by: Relinquished by: elinquished by City: Richmond State, Zip: CA, 94804 Phone: Email:

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Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"

April 21, 2012

Client:

TestAmerica, Irvine

17461 Derian Ave., Suite 100

Irvine, CA 92614 Attn: Debby Wilson



"dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107 Ventura, CA 93003

(805) 650-0546 FAX (805) 650-0756 CA DOHS ELAP Cert. No.: 1775

Laboratory No.:

A-12041403-001

Job No.:

440-8693-1

Sample I.D.:

Outfall 008 (440-8693-1)

Sample Control:

The sample was received by ATL chilled, within the recommended hold time and with the chain of custody record attached. Testing conducted on only one sample per client instruction (rain runoff sample). The temperature was acceptable as sample was received directly from field.

Date Sampled:

04/13/12

Date Received:

04/14/12 9.6°C

Temp. Received: Chlorine (TRC):

0.0 mg/l

Date Tested:

04/14/12 to 04/20/12

Sample Analysis:

The following analyses were performed on your sample:

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

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

Result Summary:

Chronic:

NOEC

TUc 100% 1.0

Ceriodaphnia Survival: Ceriodaphnia Reproduction:

100%

1.0

Quality Control:

Reviewed and approved by:

Joseph A. LeMay

Laboratory Director

CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0



Lab No.: A-12041403-001

Date Tested: 04/14/12 to 04/20/12

Client/ID: TestAmerica - Outfall 008 (440-8693-1)

TEST SUMMARY

Test type: Daily static-renewal.

Species: Ceriodaphnia dubia.

Age: < 24 hrs; all released within 8 hrs.

Test vessel size: 30 ml.

Number of test organisms per vessel: 1.

Temperature: 25 +/- 1°C.

Dilution water: Mod. hard reconstituted (MHRW).

QA/QC Batch No.: RT-120403.

Endpoints: Survival and Reproduction.

Source: In-laboratory culture. Food: .1 ml YTC, algae per day.

Test solution volume: 15 ml. Number of replicates: 10.

Photoperiod: 16/8 hrs. light/dark cycle.

Test duration: 6 days.

Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	23.0
100% Sample	100%	28.1

CHRONIC TOXICITY

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

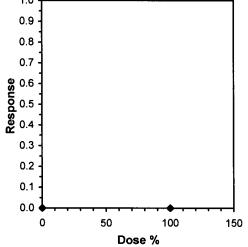
QA/QC TEST ACCEPTABILITY

Parameter	Result				
Control survival ≥80%	Pass (100% survival)				
≥15 young per surviving control female	Pass (23.0 young)				
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)				
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 12.0%)				
Statistically significantly different concentrations relative difference > 13%	Pass (no concentration significantly different)				
Concentration response relationship acceptable	Pass (no significant response at concentration tested)				

			Cerioda	aphnia Sui	vival and	Reprodu	uction Tes	t-Surviva	al Day 6		
Start Date: 4/14/2012 15:00 Test ID: 12			12041403	12041403c Sample ID:					Outfall 008		
End Date:	4/20/2012	14:30	Lab ID:	CAATL-Ac	uatic Tes	ting Labs	Sample Ty	pe:	SRW2-Ind	lustrial stormwater	
Sample Date:	4/13/2012	18:55	Protocol:	FWCH-EP	A-821-R-	02-013	Test Spec	es:	CD-Ceriod	laphnia dubia	
Comments:											
Comments: Conc-%	1	2	3	4	5	6	7	8	9	10	
	1	2	3 1.0000	4	5	6 1.0000	7	8 1.0000	9 1.0000	10 1.0000	

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

	0.05)	NOEC	LOEC	ChV	TU				
ct Test		100	>100		1				
vs D-Control									
			Line	ar Interpo	lation (20	0 Resample	s)		
%	SD	95%	L CL	Skew					
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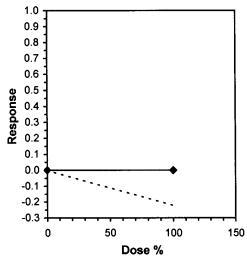
			Ceriod	aphnia Sui	vival and	Reprod	uction Tes	t-Repro	duction			
Start Date:	4/14/2012	15:00	Test ID:	12041403	12041403c Sample ID:			:	Outfall 008			
End Date:	4/20/2012	14:30	Lab ID:	CAATL-Aq	uatic Test	ting Labs	Sample Ty	rpe:	SRW2-Ind	lustrial stormwate	r	
Sample Date:	4/13/2012	18:55	Protocol:	FWCH-EP	A-821-R-0	02-013	Test Speci	ies:	CD-Ceriod	laphnia dubia		
Comments:												
Conc-%	1	2	3	4	5	6	7	8	9	10		
D-Control	24.000	25.000	23.000	17.000	22.000	25.000	28.000	27.000	26.000	13.000		
100	27 000	25.000	29,000	32.000	29.000	28.000	27.000	27.000	27.000	30.000		

			•	Transform: Untransformed			Rank	1-Tailed	Isot	onic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
D-Control	23.000	1.0000	23.000	13.000	28.000	20.290	10			25.550	1.0000
100	28.100	1.2217	28.100	25.000	32.000	7.008	10	144.50	82.00	25.550	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.89798	0.905	-1.3134	2.64151
F-Test indicates equal variances (p = 0.02)	5.61605	6.54109		
Threat indicates equal variances (p = 0.02)	3.01003	0.04100		

Hypothesis Test (1-tail, 0.05)
Wilcoxon Two-Sample Test indicates no significant differences
Treatments vs D-Control

		Lit	Linear Interpolation (200 Resamples				
%	SD	95% CL	Skew				
>100							
>100							
>100				1.0 —			
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			Cerioda	aphnia Su	rvival and	Reprod	uction Tes	st-Repro	duction	
Start Date: End Date: Sample Date: Comments:	4/14/2012 4/20/2012 4/13/2012	14:30	Lab ID:	120414036 CAATL-AC FWCH-EP	uatic Tes	ling Labs	Sample ID Sample Ty Test Spec	уре:		3 Iustrial stormwater daphnia dubia
Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	24.000	25.000	23.000	17.000	22.000	25.000	28.000	27.000	26.000	13.000
100	27.000	25.000	29.000	32.000	29.000	28.000	27.000	27.000	27.000	30.000

	•	_		Transforn	n: Untran	sformed		· · · · · · · · · · · · · · · · · · ·	1-Tailed	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
D-Control	23.000	1.0000	23.000	13.000	28.000	20.290	10		•.	
100	28.100	1.2217	28.100	25.000	32.000	7.008	10	-3.184	1.730	2.771

Auxiliary Tests					Statistic		Critical	**	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal di	stribution (p <= 0.05)	•	0.89798		0.905		-1.3134	2.64151
F-Test indicates equal variances	(p = 0.02)		•		5.61605		6.54109			•
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100		1	2.771	0.12048	130.05	12.8278	0.00514	1, 18
Treatments vs D-Control										.,

CERIODAPHNIA DUBIA CHRONIC BIOASSAY **EPA METHOD 1002.0 Raw Data Sheet**



Lab No.: A-12041403-001

Start Date: 04/14/2012 Client ID: TestAmerica - Outfall 008

Client ID: T	[estAmer]	ica - Ou	tfall 00	8								Start.	Date: 04	714/20	12
		DA	Y 1	DA	Y 2		DAY 3	DA	Y 4	DA	Y 5	DA	Y 6	D.	AY 7
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst I	nitials:	1	1/	1	M	- /	11	1	1/1	1/	12		1		
Time of Re	eadings:	1500	1500	1500	Isa	IKA	1500	1500	150	150	1430	1430	1430		<u> </u>
	DO	8.6	7.4	8.4	29	7-0	76	2.8	7.9	8.4	8.0	9./	8.3		
Control	pН	8.1	ه. ۷	8.1	82	8-1	7.8	29	80	8-0	7. 4	7. 7	7.9		
	Temp	24.3	24.3	24.3	246	24.7	7 24.3	24.4	24.3	24.4	24.7	٤4.7	25.1]	
	DO	8.5	8.0	90	80	8.6	9 8.1	8,6	78	9.2	7.8	9.1	8-7	(
100%	рН	8,2	8.0	8.1	7-8	7-8	3 7,9	7.8	7.8	7.7	7.1	7.5	8.0		1 —
	Temp	74.4	24.6	۲4. ۶	247	24.7	242	25.1	24.3	24.7	24.4	۲43	24.1		
	A	dditional l	Paramete	rs				Co	ntrol				100% San	ple	
	Co	onductivity	(umohm	s)				376				121			
	A	lkalinity (n	ng/l CaC() ₃)	-			68				40	7		
	Н	lardness (m	ng/l CaCC)3)				99				49	,		
	A	mmonia (n	ng/l NH ₃ -	N)				20.				0.0	>		
						S	Source of N	eonates	·						
Rej	plicate:		Α	В	C		D	E	F		G	Н	I		J
Bro	Brood ID: (A			74	21	<u> </u>	3/3	(c	30	2 ک	E	3 <i>F</i>	16) <i>H</i>
Sampl	Sample Day 1 2 3 4		-		, , ,	Numbe	er of Young		T 1			otal Live Young	No. Liv Adults		Analyst Initials
				A B	C	D	E F	G	Н	I	J				7/4
			$-\parallel$	$\frac{2}{2}$	8		1) 0	2 0		8		0	10	,	1/1/1
				00	+	0						70	10	, -	1/4
			-	7 0		$\frac{\mathcal{O}}{\mathcal{O}}$		0 <u>5</u> 3 0	4	4	4	19	10	╢.	1/2
Contro	oı	5		$7 \mid \gamma$	9	0	61	\$ 10	17	10		71	10	<u> </u>	m
		6		4/4	10	12	VII	 	11	12	9	20	10		ML
:	6 7		-		_	-		- _		_					
		Total	2	4/29	123	17	222	5/25	327	26	13	230	10		
		1		00	0	0	00	0	0	0	0	\mathcal{C}	10		
		2		Q[c]	10	0	0 0	20	0			0	10		1
		3	_	0 4	15	0	00		15	5	4	19	10	_ _	1
100%	<u> </u>	4	_#	5/0	0	4	د/ <	3	14	4		<u>25</u>	10	_	Thi
100%		5		19	8	12	101	1/6	1 /	8	12	94	10	_	1/2
	-	6		5/14	116	16	15/1	2 /4 	15	14	4 /	43	10	+	10
	F	7		- -	100	7 -			124			251	17	- -	M
II.	<u> </u>	Total		27/2	129	32	29 2	XIZ	7127	1271	30L	201			

Circled fourth brood not used in statistical analysis.

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



CHAIN OF CUSTODY

NPDES Level IV:		№ ₹	s: (Check) All Level IV:	Data Requirements: (Check) No Level IV: All La	Data Requir			; 	Case		•						7		Soundaries of
	ļ	ļ	Check) On ice:	Sample Integrity: (Check)	Sample Intact:	14-12	7 7		Date/Time	Kill	The same of the sa	Received By	2 Receive	4:2	7	Date/Time:	May	D	Relinguished By
Normal: X		 	72 Hour. 5 Day:		24 Hour.	3	12:					N ab	_	225	12	"		y c	the R
			II 008 for the same event. Tum-around time: (Check)	or the same event	for the	COC Page 1 of 2 for Outfall 008	1 of 2 !	Page	COC P	order fy	same wark order for	to the sa	These must be added to th	These must	2	Date/Time:			Relinquished By
				ň	тт өч	08 for this storm event.	utfall 0	s for O	ample	osite S	the Comp	of 2 list	COC Page 2 of 2 list the Composite Samples for Outfall 008 for th	င္ပ					
							$\mid \cdot \mid$												
		×	_	_				-	\Box			22	NaOH	15	2	1	500 mL Poly	٤	Outfall 008
Filter win 24hrs of receipt at lab		×										21	None		P	1	1L Poly	8	Outfall 008
			×									20	None			1	1L Poly	٧	Outfall 008
Only test if first or second rain events of the year				×								19	None			1	1 Gal Poly	٧	Outfall 008
					×			ļ				18A, 18B	None 18/	_		2	1L Amber	\$	Outfall 008
analysis)						178	None	_		1	500 mL Amber	:	Cuban 000
Unfiltered and unpreserved						×						17A	None			1	2.5 Gal Cube	٤	Outfall DOS
		_					×					16A, 16B	None 16/			2	1L Amber	٤	Outfall 008
								×				15A, 15B	None 15/			2	500 mL Poly	\$	Outfall 008
								×				14	H ₂ SO ₄	_		1	500 mL Poly	٧	Outfall 008
								İ	×			13	None	_		1	500 mL Poly	٧	Outfall 008
										×		12A, 12B	None 12/			2	500 mL Poly	٧	Outfall 008
											×	11A, 11B	None 11/			2	1L Amber	٧	Outfall 008
											×	108	HNO ₃			1	1L Poly	٤	Outfall 008 Dup
												10A	HNO ₃		1,95:8/ 2,05:51-A	1	1L Poly	٧	Outfall 008
	0,2,		Total		svo	Tritiu Coml Radii		Amm TDS,	Nitrat		Hg, E as Ca	Bottle **	Preservative Bo		Sampling Date/Time	# of Cont	Container Type	Sample Matrix	Sample Description
		aCO₃	Disso		Cs (62	m (H- oined um 22			e-N, 1		S, V, T aCO₃	Reco		3-6515	(626) 568-6515				
		s, Al, 1	olved	xicity	25) + 1	3) (90 Radiu 8 (90	/PCBs	N (350	Nitrite		1, Fe,	verab		3-6691 her	(626) 568-6691 Fax Number:		PANAG B		Sampler Por
			Meta		PP	16.0) um 2 14.0)	s , C	0.2)	-N		AI, S	le M		ımber:	Phone Number:		wyn Kelly	er: Bron	Project Manager: Bronwyn Kelly
Comments		JC, ZH · FF, II	als: Sb, Cd, Cu Se, Zn + PP, H			Gross Beta(90 , Sr-90 (905.0) 26 (903.0 or 9 , Uranium (900 r 901.1)	hlorpyrifos, Dia	· · · · · · · · · · · · · · · · · · ·	·	N, F, Perchlora	Se, Zn + PP, F	letals: Sb, Cd,	py valley	Stormwater at mappy valley	Stormwa		Debby Wii	Contact:	Test America Contact: Debby Wilson
		aruness	ı, Pb, Hg,			, Total 03.1) &	azinon +			nte	lardness	Cu, Pb,	30 (1)	Annual Outfall 008 COMPOSITE	Annual Outfa		ite 200	Ave, St 1007	MVVH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007
		$\frac{1}{1}$		EQUIR	SIS R	ANALYSIS REQUIRED						T	n o		Project:			daress:	Client Name/Address:

17481 Derian Ave Suite 100			<u>></u>	Γ : :) i			L					Q	≯	3	TestAmerica	Q
Irvins, CA 92614-5817 Phone (949) 361-1022 Eav (949) 360-2397			<u>c</u>	Chain of customy Necolu	c c	i énoi	, et o	2					HA CO	DER IN EN	MECHIN	HE COMEN INTERNIORWANT RADING	OR
Client Information (Sub Contract Lab)	Sampler			Lab PM: Wilson	Debby				Cardar 1	Cereter Tracking Mo(s):	8		COC No.	7.1	Ì		
Cieni Conied: Shipping/Receiving	Phone.			dehby	E-Matt: debby.wilson@t	E-Meil: debby.wilson@lestamericalnc.com	alnc.com			i		ı	Page 1 of 6	2			
Company: Aquatic Testing Laboratories							Analysis		Requested	۵			Job #: 440-8893-1	2			
Aderes: 4350 Transport #107,	Due Date Requested: 4/30/2012	8									\exists		Preserve	on Co	: 8		_
City: Ventura	TAT Requested (thys):	,s.			3								C-ZHAG		N-None	₽ =	
Salan Zip CA, 93003					R02-01								D - Nillie Acid		P - Me20	8 6	
Phona.	PO#				78541							1	G Amed		8 H2SC	¥ 2503	,
Email:	WO#:				io, EP								i - lue - lue J - Di Water	S	Y - Age 6	1 - ISP Dogeđanjedov U - Apalogia V - NGAA	2
Project Rama: Annual Outfail 006	Pic(ed ii: 44002824				nic Ge								K-E01A		W-ph 4 Z-olher	w - ph 4-5 Z - other (specify)	
Sle: 80eing SSFL	SEOWIK				Chre								Others				
		Sample	Sample Type (C=qomp,	Motrix (News)	BCONTRACT							o =defetore					,
Sample Identification - Client ID (Lab ID)	Sample Dete			(*- Tanua, A: A*)	2 S							区量		ogeial lux	strucilo	Special instructions/Note:	
Outles 00e (440-869-1)	4/13/12			Water	×												
					+			-	1								
								+									
Possible Hazard identification Hacontimed	-				Sample	Sample Disposel (A fee may	I (A fee :		De assessed if semples	d If say	Ta selict	Lete a	teined tongs	ere reteined tonger than 1 month)	figure.	7	
Deliverable Requested: I, II, III, IV, Other (specify)					Special	Special instructions/QC Requirements:	MAC Re	quireme	nis:					l			
Empty Kli Relinquished by:		Date:			Time:		2		×	Maihad of Shipmoot	(perant:						
16	CIJ91/わ :www.mong		- G	Company	7	A Stylendow	100	M			Dalis/Ilme:	7/1	1-12	32	Company	T	\mathcal{U}
Relinquished by:	Date/Time:			Company	Reg	Regelved by:					Dale/Time:				Ausduco		
Refinquished by:	Date/Time:		<u>-</u>	Company	Rec	Received by:	1				Dale/Timec				Company	۱	
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Ceriodaphnia dubia Chronic Toxicity Test Reference Toxicant Data

CERIODAPHNIA CHRONIC BIOASSAY EPA METHOD 1002.0 REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-120403

Date Tested: 04/03/12 to 04/09/12

TEST SUMMARY

Test type: Daily static-renewal. Species: *Ceriodaphnia dubia*.

Age: <24 hrs; all released within 8 hrs.

Test vessel size: 30 ml.

Number of test organisms per vessel: 1.

Temperature: 25 +/- 1°C.

Dilution water: Mod. hard reconstituted (MHRW).

Reference Toxicant: Sodium chloride (NaCl).

Endpoints: Survival and Reproduction.

Source: In-laboratory culture. Food: .1 ml YTC, algae per day. Test solution volume: 20 ml.

Number of replicates: 10.

Photoperiod: 16/8 hrs. light/dark cycle.

Test duration: 6 days.

Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survi	ival	Mean Numb Young Per F	
Control	100%		23.5	
0.25 g/l	100%		24.3	
0.5 g/l	100%		21.4	
1.0 g/l	100%		16.0	*
2.0 g/l	60%	*	1.4	**
4.0 g/l	0%	*	0	**

^{*} Statistically significantly less than control at P = 0.05 level

** Reproduction data from concentrations greater than survival NOEC are

excluded from statistical analysis.

CHRONIC TOXICITY

Survival LC50	2.1 g/l
Reproduction IC25	0.82 mg/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (23.5 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 16.2%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 31.9%)
Concentration response relationship acceptable	Pass (Response curve normal)

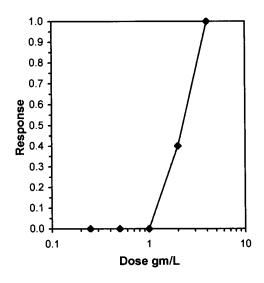
			Cerioda	aphnia Sur	vival and	Reprodu	uction Tes	t-Surviv	al Day 6	
Start Date:	4/3/2012	14:00	Test ID:	RT120403	С		Sample ID	:	REF-Ref T	oxicant
End Date:	4/9/2012	14:00	Lab ID:	CAATL-Ad	uatic Test	ting Labs	Sample Ty	/pe:	NACL-Soc	lium chloride
Sample Date:	4/3/2012		Protocol:	FWCH-EP	A-821-R-0	02-013	Test Speci	ies:	CD-Cerioo	laphnia dubia
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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

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

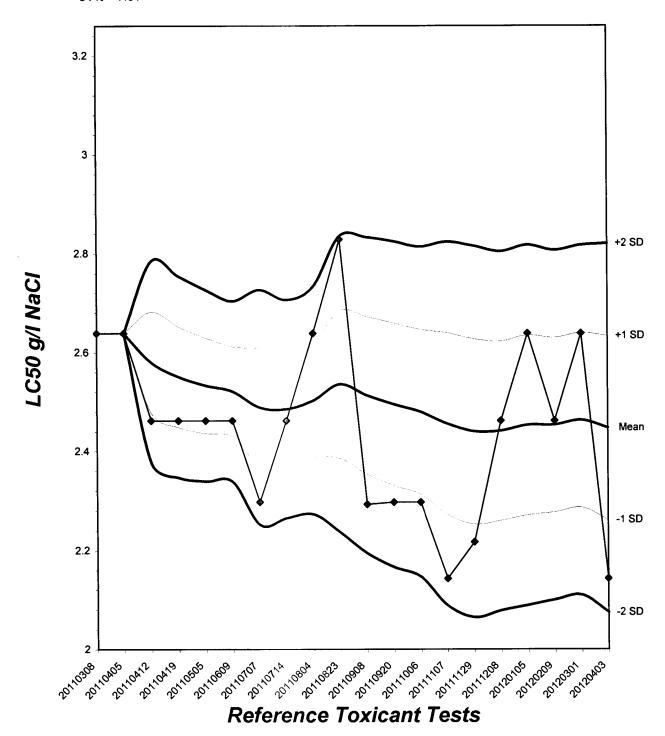
Trimmed Spearman-Karber

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



Ceriodaphnia Chronic Survival Laboratory Control Chart





			Cerioda	phnia Su	vival and	Reprod	uction Tes	t-Repro	duction	
Start Date:	4/3/2012 1	4:00	Test ID:	RT120403	С		Sample ID	:	REF-Ref T	oxicant
End Date:	4/9/2012 1	14:00	Lab ID:	CAATL-Ac	uatic Test	ting Labs	Sample Ty	rpe:	NACL-Soc	lium chloride
Sample Date:	4/3/2012		Protocol:	FWCH-EP	A-821-R-0	02-013	Test Speci	ies:	CD-Ceriod	laphnia dubia
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	17.000	25.000	25.000	24.000	27.000	28.000	27.000	20.000	22.000
0.25	21.000	17.000	29.000	26.000	27.00 0	25.000	25.000	27.000	23.000	23.000
0.5	16.000	14.000	23.000	22.00 0	24.000	23.000	23.000	23.000	23.000	23.000
1	15.000	17.000	8.000	20.00 0	23.00 0	15.000	12.000	22.000	9.000	19.000
2	0.000	0.000	0.000	2.000	4.00 0	3.000	0.000	0.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

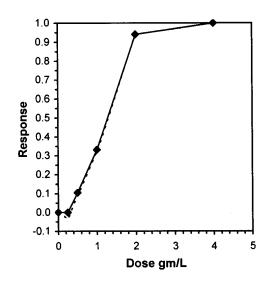
				Transform: Untransformed					1-Tailed	isoto	onic
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical	Mean	N-Mean
D-Control	23.500	1.0000	23.500	17.00 0	28.000	15.441	10			23.900	1.0000
0.25	24.300	1.0340	24.300	17.0 00	29.00 0	14.262	10	111.50	77.00	23.900	1.0000
0.5	21.400	0.9106	21.400	14.000	24.000	16.067	10	87.00	77.00	21.400	0.8954
*1	16.000	0.6809	16.000	8.000	23.000	32.409	10	66.00	77.00	16.000	0.6695
2	1.400	0.0596	1.400	0.000	5.00 0	139.646	10			1.400	0.0586
4	0.000	0.0000	0.000	0.000	0.000	0.000	10			0.000	0.0000

Auxiliary Tests	acc .				Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates nor	n-normal dis	stribution		0.93053	0.94	-0.5964	-0.342	
	Bartlett's Test indicates equal variances (p = 0.53)							
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU				
Steel's Many-One Rank Test	0.5	1	0.70711				* *	

Treatments vs D-Control

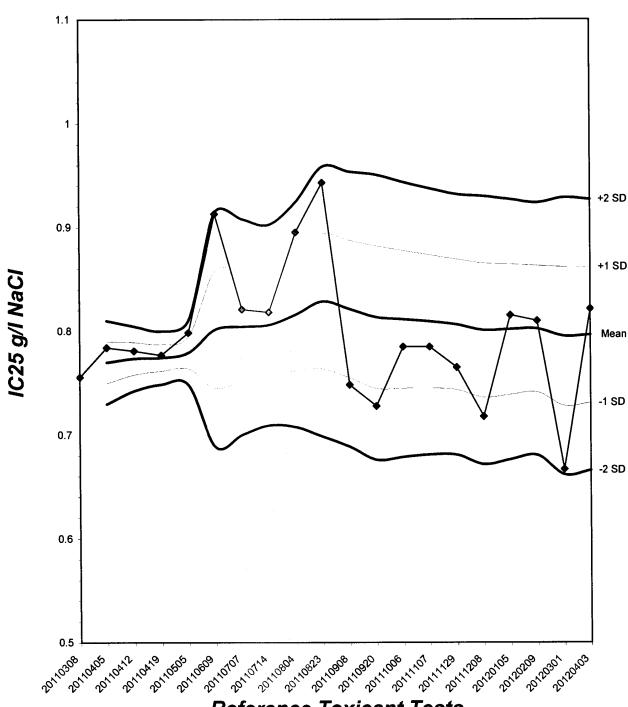
Linear Interpolation	(200 Resamples)
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Point	gm/L	SD	95%	CL	Skew
IC05	0.3695	0.0911	0.1696	0.5686	0.2464
IC10	0.4890	0.0910	0.3077	0.662 2	0.18 15
IC15	0.6005	0.1009	0.4034	0.7714	0.1407
IC20	0.7111	0.1157	0.4592	0.957 9	0.18 07
IC25	0.8218	0.1195	0.5745	1. 05 36	0.0455
IC40	1.1137	0.1010	0.8928	1.2609	-0.5191
IC50	1.2774	0.0905	1.0680	1.4019	-0.8 5 77



Ceriodaphnia Chronic Reproduction Laboratory Control Chart





Reference Toxicant Tests

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			Ceriod	aphnia Su	rvival and	Reprod	uction Tes	t-Repro	duction	
Start Date:	4/3/2012	14:00	Test ID:	RT120403	С		Sample ID):	REF-Ref 1	Toxicant
End Date:	4/9/2012	14:00	Lab ID:	CAATL-Ac	juatic Test	ting Labs	Sample Ty	/pe:	NACL-Soc	dium chloride
Sample Date:	4/3/2012		Protocol:	FWCH-EP	A-821-R-0	02-013	Test Spec	ies:	CD-Cerioo	laphnia dubia
Comments:										
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	20.000	17.000	25.000	25.000	24.000	27.000	28.000	27.000	20.000	22.000
0.25	21.000	17.000	29.000	26.000	27.000	25.000	25.000	27.000	23.000	23.000
0.5	16.000	14.000	23.000	22.000	24.000	23.000	23.000	23.000	23.000	23.000
1	15.000	17.000	8.000	20.000	23.000	15.000	12.000	22.000	9.000	19.000
2	0.000	0.000	0.000	2.000	4.000	3.000	0.000	0.000	0.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

				Transform	n: Untrar	sformed			1-Tailed		•
Conc-gm/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	
D-Control	23.500	1.0000	23.500	17.000	28.000	15.441	10			•	
0.25	24.300	1.0340	24.300	17.000	29.000	14.262	10	-0.448	2.137	3.819	
0.5	21.400	0.9106	21.400	14.000	24.000	16.067	10	1.175	2.137	3.819	
*1	16.000	0.6809	16.000	8.000	23.000	32.409	10	4.196	2.137	3.819	
2	1.400	0.0596	1.400	0.000	5.000	139.646	10				
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				

Auxiliary Tests					Statistic		Critical		Skew	Kurt
Shapiro-Wilk's Test indicates non	-normal dis	stribution	(p <= 0.05)		0.93053		0.94		-0.5964	-0.342
Bartlett's Test indicates equal var	iances (p =	0.53)			2.22089		11.3449			
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	0.5	1	0.70711		3.81887	0.1625	139.8	15.9722	1.7E-04	3, 36
Treatments vs D-Control										

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CERIODAPHNIA DUBIA CHRONIC BIOASSAY

Reference Toxicant - NaCl Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-120403

Start Date: 04/03/2012

													<u> </u>	ī
Sample	Day	A	В	Nu C	mbei D	of Yo	oung F	Produ G	iced H	I	J	Total Live Young	No. Live Adults	Analyst Initials
	1	0	0	0	0	0	0	0	0	C	0			Oa
	2	0	0	0		0		0	0	10	0	0	10	
	3	0	0	0	0	3	0	74	3))				
	4		5	4	4	0	4	0	10	3	0	10	10	11
Control	5	3		 	<u> </u>	8	9	9			8		10	
		0	0	10				-	10	7		69	10	
	6	17	12	11	13	13	14	کا	14	10	10	129	10	
	7	^		_	-		_	_		_		-		
	Total	20	7	<u>25</u>	25	24	27	ス <u>多</u>	77		22	235	10	m
	1	0	0	0	0	0	0	0	0	0	0	0	10	1/
	2	0	\mathcal{O}	0	0	0	0	0	0	0	0	0	10	1/2
	3	0	0	0	0	4	C	4	<u>ر</u>	<u>C</u>	0	8	10	
0.25 g/l	4	5	4	5	5	0	4	0	5	4	4	36	10	1
8	5	0	0	10	9	10	9	7	9	9	8	71	10	M
	6	16	13	14	12	43	12	14	13	10	11	128	10	1/
	7			_					(•	_		
	Total	21	17	29	26	27	25	25	رلا	23	23	243	Jυ	gh
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	2	0	0	0	0	0	C	0	0	U	0	0	10	h
	3	0	0		C	0	C	4	$\hat{0}$	U	J	U	10	M
0.5 //	4	4	4	3	3	5	4	0	Μ	5	4	34	10	
0.5 g/l	5	O	0	7	9	8	7	9	7	フ	8	62	10	M
	6	12	-10	13	10	11	12	.10	13	12	1/	114	10	1/
	7	_		_		_	_		_		_			
	Total	16	14	23	22	24	63	23	23	23	23	214	10	

Circled fourth brood not used in statistical analysis.

^{7&}lt;sup>th</sup> day only used if <60% of the surviving control females have produced their third brood.

Aquatic Testing Laboratories

CERIODAPHNIA DUBIA CHRONIC BIOASSAY

Reference Toxicant - NaCl Reproduction and Survival Raw Data Sheet

QA/QC No.: RT-120403

Start Date: 04/03/2012

C1	D-			Nu	ımbe	r of Y	oung]	Produ	ced			Total	No. Live	Analyst
Sample	Day	A	В	С	D	E	F	G	H	I	J	Live Young	Adults	Initials
	1	\cup	0	0	0	0	0	C	0	C	0	0	10	h
	2	0	0	0	0	0	0	0	0	0	0	C	10	12
	3	0	0	0	0	3	0	0	0	0	0	3	10	h
1.0 ~/1	4	3	4	2	3	0	3	4	L	2	3	28	10	1
1.0 g/l	5	0	0	0	7	7	U	8	7	7	6	4°\$	40	h
	6	12	13	6	10	13	12	0	11	0	10	87	10	n
	7		_		_		_	ľ	(-	_		_	
	Total	15	17	8	20	23	15	12	22	9	19	160	lυ	2
	1	0	0	0		0	\subset	0	0	\bigcirc	9	0	10	R
	2	X	人	0	C	0	0	X	X	0	0	0	٩	B
	3	_	_	0		10	0		ſ	0	0	0	6	
• • "	4		_	0	0	C	C	_)	0	0	C	6	1/2
2.0 g/l	5		-	0	2	2	3		_	0	Z	9	6	1
	6	_	_	0	0	Z	0	1	1	0	W	5	b	
	7		-		_	_	_	_	_			-		
	Total	0	0	0	2	دا	3	0	0	0	5	14	6	72
	1	/	X	×	入	X	×	X	入	X	X	0	0	p
	2		_	_	-		_	_	_	_	_		_	/_
	3	_	_	_	_	_	_	_	_	_	_		_	
	4	1_	_	-	_		_	_	-	-	_	_		
4.0 g/l	5	1-	_	_	_	-	-	-	_	_	_	_	_	
	6	-	-	_	_	_	_	_	_	-	_	_	_	_
	7	1-	-	-	_	_	_	_	_	_	_		_	
	Total		0	0	0	C	0		0	6	0	0	0	n

Circled fourth brood not used in statistical analysis.

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

Aquatic Testing Laboratories

CERIODAPHNIA DUBIA CHRONIC BIOASSAY

Reference Toxicant - NaCl Water Chemistries Raw Data Sheet

QA/QC No.: RT-120403

Start Date:04/03/2012

$\begin{array}{c c c c c c c c c c c c c c c c c c c $	((
Analyst Initials:			DA	Y 1	DA	Y 2	DA	Y 3	DA	Y 4	DA	Y 5	DA	Y 6	DA	Y 7
Time of Readings: MOD 14w			Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	السما
DO	Analyst I	nitials:	1	1	1	1	1	2	7	9	1	1	7			h
Control PH 8.0 8.2 8.1 8.1 8.1 8.2 8.3 8.1 8.2 8.1 8.0 8.0 8.1 8.0 7 Temp 247 247 247 243 246 8.1 8.2 8.1 8.2 8.1 8.0 8.1 8.0 7 PH BO 8.4 8.4 8.2 8.2 8.2 8.2 8.3 7.4 8.6 8.3 8.0 8.1 8.0 8.1 8.0 7 Temp Au, \$247 24, \$245 24, \$245 24, \$248	Time of R	eadings:	1400	1400	1400	1400	1400	140	1400	1400	140	1400	1400	1/c		
Temp 247 247 243 243 246 247 248 247 248 247 243 245 — — — — — — — — — — — — — — — — — —		DO	8.3	8.2	29	8.6	7.8	4.5	7.9	8.4	8.5	8,7	8.3	8-6	_	
DO	Control	pН	8-0	8,2	8,1	8.1	8.2	8.2	8.1	8.2	8.1	810	8-1	80		
0.25 g/l PH		Temp	24.7	247	247	24.3	24.6	24.7	ટ <i>પ</i> . 8	24.7	24.8	24.4	ય્ય. રુ	24.5		
Temp		DO	8.4	8.4	8.2	8.6	8,4	8,3	8->	8.3	7.4	26	8.3	3.7	_	1
DO	0.25 g/l	pН	8.0	8.1	8.2	8/2	8.2	8.2	8,1	8, 2	8.1	8.0	8.1	80		
0.5 g/l pH		Temp	24.5	<u> </u>	24.5	24.5	24.7	24.8	24.6	24.7	24.8	24.4	૮ ५.૬	246		
Temp 24, 74, 14, 14, 24, 24, 34, 34, 34, 34, 34, 34, 34, 34, 34, 3		DO	8.2	8,3	8.1	8,6	8,2	8, 6	8.0	8.4	8.1	8.6	8.4	8-0		
1.0 g/l PH 8.0 8.1 8.2 8.2 8.2 8.2 8.2 8.1 8.1 8.1 8.1 8.1 8.1 8.1 8.1 8.0 S.0 S.0 S.0 S.0 S.0 S.0 S.0 S.0 S.0 S	0.5 g/l	pН	8.0	8.1	8,2	8.1	8,)	8.2	8,1	8.1	8.1	8.0	8.1	8-0		
1.0 g/l pH 8.0 8.1 8.2 8.2 8.2 8.1 8.1 8.1 8.1 8.1 8.1 8.0 — — — — — — — — — — — — — — — — — — —		Temp	24.1	24.9	<i>૨५૬</i>	24.2	ટ4. 3	24.8	24. >	ટપ,8	24.8	24.3	24.7	25.2		(
Temp 24.7 24.7 24.5 24.5 24.7 24.7 24.6 24.8 24.3 24.5 24.5 — — DO 8.4 8.1 7.9 8.2 8.1 8.3 7.9 8.2 8.1 8.3 8.1 8.2 5.1 8.1 8.2 5.1 8.1 8.1 8.0 8.1 8.0 8.0 8.0 8.0 8.0 8.0 8.0 5.0 — — Temp 24.7 25.2 24.5 24.5 24.3 24.5 24.7 24.8 24.8 24.3 24.6 24.6 24.6 24.6 24.6 24.6 24.6 24.6		DO	8.2	8,3	8.1	8.4	8,3	8.5	7. 9	8.1	810	8,4	8. 3	8.1)
DO 8.4 8.2 7.9 8.2 8.1 8.3 7.9 8.2 8.1 8.3 8.1 8.3 8.1 8.3 8.1 8.2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	1.0 g/l	pН	8.0	812	8,2	8,2	8,2	81	8.1	8.1	8)1	8,1	8.1	8.0	_	1
2.0 g/l pH 8.0 8.1 8.2 8.1 8.2 4.1 8.0 8.1 8.1 8.0 8.0 8.0 8.0 8.0 5.0 — — — — — — — — — — — — — — — — — — —		Temp	24.7	247	24.5	242	24.5	24.7	24.7	246	24.8	24.7	24.5	24.5		
Temp 24.7 25.2 24.5 24.5 24.3 24.5 24.7 24.8 24.8 24.3 24.6 24.6 24.6		DO	8.4	8.2	7.9	8,2	8:1	8.3	7.9	8.2	8,1	8.3	8-1	8.2)
DO 8.5 8.1	2.0 g/l	pН	8.0	8,1	8.2	8.1	8,2	4.1	810	8.1	8.1	8.0	8.0	8.0)
4.0 g/l pH 8 / 8.1		Temp	24.7	25,2	८५5	24,5	<i>ે4.</i> 3	24.5	24.7	24.8	24.8	243	24.6	24-6		
4.0 g/l pH 80 8.7		DO	8.5	8.1	_	_	_	-			`	`	_	`	1	/
Temp 24.7 24.5	4.0 g/l	pН	80	8.1	-	-	-	_	_	-		_		-	-	
		Temp	24.7	24.5		-		_							_	

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

		Control		Н	igh Concentratio	n
Additional Parameters	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (µS)	309	>19	316	6960	2520	3310
Alkalinity (mg/l CaCO3)	65	67	67	68	68	68
Hardness (mg/l CaCO ₃)	90	87	88	g O	89	88

Source	of Neonates
	-

Brood ID:	IB	20	36	スカ	18	3E	11=	19	3 <i>H</i>	2I
Replicate:	A	В	С	D	Е	F	G	Н	I	7#J

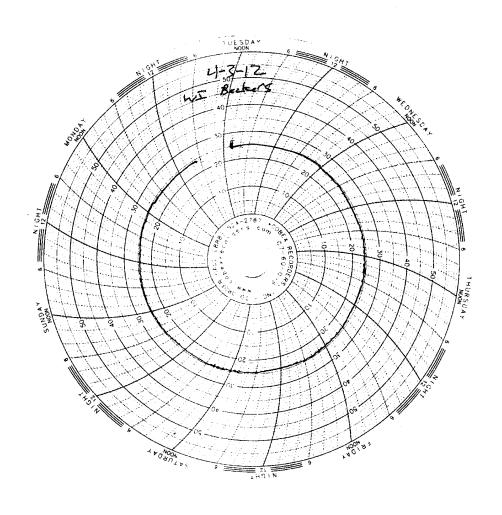


Test Temperature Chart

Test No: RT-120403

Date Tested: 04/03/12 to 04/09/06

Acceptable Range: 25+/- 1°C



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Project: Boeing-SSFL NPDES	mwater at Happy Valle mwater at Happy Valle sone Number. 6) 568-6691 c Number. 6) 568-6515 Sampling Date/Time None None None None None None None Non	ANALYSIS REQUIRED Field readings: (Log in and include in report Temp and pH)	100 PH PP PP PP PP PP PP PP PP PP PP PP PP	Oil & C VOCs VOCs Cr (VI) Fecal C E. coil	×	×	×	×	×	×	×	× ×		A control of the cont	Maria Same	Sample Integrily: (Check)
	Suite 200 Suite 200 Ct. Debby Wilson Container Type Type Type Type Type Type Type Type	alley	(M∃H- ≯ 991) эввэл	Bottle #	2A, 2B, 2C	3A, 3B, 3C	4A, 4B, 4C	5A, 5B, 5C	Ф						Received By	Received By
	Suite 200 Suite 200 Ct. Debby Wilson Container # of Type cont. 1 L Amber 2 VOAs 3 VOAs 125 mL Poly 1 125 mL Poly 1 125 mL Poly 1 125 mL Poly 1 125 mL Poly 1 125 mL Poly 1 125 mL Poly 1 125 mL Poly 1 125 mL Poly 1 125 mL Poly 1 125 mL Poly 1 125 mL Poly 1	iject: sing-SSFL NPDES nual Outfall 008 AB rmwater at Happy Va	one Number: 6) 568-6691 < Number:			None	HCI	None	None	Na2S20	Na2S2O		00 65		4-13-20	4-12-12
	we, Suite 200 07 Natact: Debby Natact: Debby We vov			# of Cont.	+				_	_	_				Date/Time	Date/Time

- 2 8 4 5 9 L 8 6 1 L 2 E

	Comments											Unfiltered and unpreserved	analysis		Only test if first or second rain events of the year		Filter w/in 24hrs of receipt at lab					10 Day:		NPDES Level IV:
																							نم	
		əp	Cyani															×					×	
	ils: Sb, Cd, Cu, Pb, Hg, e, Zn + PP, Hardness	TI, Fe, AI, N i, S		l													×			too	leck)	72 Hour 5 Day:		, = = = = = = = = = = = = = = = = = = =
IRE		(S.001) sot	eedsA													×				0	me: (Cr			ents: ((
ÆÖL		ric Toxicity	Сһгоп												×					ent.	Turn-around time: (Check)		Sample Integrity: (Check)	Data Requirements: (Check) No Level IV: All Le
SIS		44 + (828) s	oons											×						F e		24 Hour: _	Sample	Data Requir
ANALYSIS REQUIRED	Gross Beta(900.0), , Sr-90 (905.0), Total 26 (903.0 or 903.1) & , Uranium (908.0), K- 1 901.1)	(0.809) (6-H) n S mųibsA beni	Tritiun Comb Radiu									>	<							of 2 list the Composite Samples for Outfall 008 for this storm event.	7	\~ \~		Sital amona
	+ nonizsiO, eojiryqrolh	D , 8804\89bis	Pestic								×									E 2	7	6		2
	,		,SQT							×									\exists			-	•	3
		(S.035) V -sino	ommA						×											S for	.e:		je:	
		M-etitite-M	Nitrate				-	×												ample CO	PerTime:		Date/Time	Date/Time:
	V, F, Perchlorate	o ⁴ ' NO³+NO³-ا	CIL' 20				×													ite S				
	eners)	(suq sil conge	пот			×														Sod E	ے ا	X		
	letals: Sb, Cd, Cu, Pb, Se, Zn + PP, Hardness	, V, TI, Fe, AI, 3		×	×															st the Co			5	9
	â		Bottle #	10A	10B	11A, 11B	12A, 12B	13	14	15A, 15B	16A, 16B	17A	17B	18A, 18B	19	20	21	22		of 2 l		/ a	Received By	Received By
	Boeing-SSFL NPDES Annual Outfall 008 COMPOSITE Stormwater at Happy Valley		Preservative	HNO ₃	HNO ₃	None	None	None	H ₂ SO ₄	None	None	None	None	None	None	None	None	NaOH		COC Page 2	2012	\	1/2	
	YF∟N utfall ITE erat⊦	mber: -6691 ber: -6515	6 9	6/12 در													-	34		Ē	7		4	
ect:	Boeing-SSFL NPDE Annual Outfall 008 COMPOSITE Stormwater at Happ	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515	Sampling Date/Time	35:81			_	_									D	7		Į,	105-41-4	2	7 2	<u>s</u>
Project:	Boei Ann CON Stor	Phol (626 Fax (626	T	3/														4.				•))	ne:
	Ison	8	# of Cont.	-	-	2	7	-	-	7	2	-	-	2	1	-	-	-			Date/Time:		Date/Time:	Date/Time
	iite 200 Debby Wi	wyn Kelly	Container Type	1L Poly	1L Poly	1L Amber	500 mL Poly	500 mL Poly	500 mL Poly	500 mL Poly	1L Amber	2.5 Gal Cube	500 mL Amber	1L Amber	1 Gal Poly	1L Poly	1L Poly	500 mL Poly				`		
dress:	ia Ave, Su 1007 Contact:	er. Bron	Sample Matrix	×	>	>	×	*	*	Χ	Χ	3	:	3	*	8	3	3				J.	M	*
Client Name/Address:	MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Project Manager: Bronwyn Kelly Sampler: R: c た B A が A 6 P	Sample Description	Outfall 008	Outfall 008 Dup	Outfall 008	Outfall 008	Outfall 008	Outfall 008	Outfall 008	Outfall 008	Outfall 008		Outfall 008	Outfall 008	Outfall 008	Outfall 008	Outfall 008			Relinquished By	17 18 18 18 18 18 18 18 18 18 18 18 18 18	Relinguished By	Relinquished By

Test America version 7/19/2010

								SISYIANA				
Test America Contact: Debby Wilson	Project. Boeing-SSFL NPDES Annual Outfall 008 GRAB Stormwater at Habov Valley	IPDES 008 Happy Valle	\					270			Field readings: (Log in and include in	
					. <u>a</u>	51)					Temp °F = 32	
Project Manager: Bronwyn Kelly Pho (62% Sampler: R. K. K. Fax	Phone Number: (626) 568-6691 Fax Number:			1-631) sease (1664-1-	624 +A+A+2C (218.6)	SeMS) molilo	(SM9221) Toxicity	hhm			Time of readings =	
Sample Sample Container # of Container # of Container	Sampling Date/Time	Preservative	Bottle #								Comments	
W 1L Amber 2	4-12-17	豆	1A, 1B	├			├					
Outfall 008 W VOAs 3		НĊ	2A, 2B, 2C	×								
Outfall 008 W VOAs 3		None	3A, 3B, 3C		×							
Trip Blanks W VOAs 3		ЮН	4A, 4B, 4C	×								
Trip Blanks W VOAs 3		None	5A, 5B, 5C		×							
Outfall 008 W 500 mL Poly 1		None	9		^	×						
Outfall 008 W 125 mL Poly 1		Na2S2O3	7			×						
Ouffail 008 W 125 mL Poly 1	*	Na2S2O3	8				×					
Outfall 008 W 1 Gal Cube 1	- 17	None	6				<u> </u>					
Cooffee J. Soonfee 1	4-13-12		0					×				
These Samples are the Grab Portion of Outfall 008 for this storm event. By Date/Time: Last Received By	b Portion of Ou	Outfall 00	8 for this sto Received By	pon event	4h-,1	osite sa Dațe/Time	w sejdu	rill follow a	follow and are to be Turn-ground time: (Check)	added to th	Composite samples will follow and are to be added to this work order. Date/Time: Turn-around time: (Check)	
200		300	HAPT	AMM/		7	3	24 Hour:		72 Hour	10 Day:	
County	1-13-16	25	Received By	A.		Date Time	1me: 1-13-12 1400 18	Sample Inter	Sample Integrity: (Check) Intact:	On loe:		•
Relinquished By Date/Time:	:91	9)	Received By	,	7	Date/Time:		Data Require	Data Requirements: (Check)	Allevelly	NPDES I evel IV.	

Page 132 of 134

6/15/2012

Login Sample Receipt Checklist

Client: MWH Americas Inc Job Number: 440-8620-1

Login Number: 8620 List Source: TestAmerica Irvine

List Number: 1 Creator: Kim, Will

Cleator. Killi, Will	
Question Answer 0	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.	
The cooler or samples do not appear to have been compromised or tampered with.	
Samples were received on ice.	
Cooler Temperature is acceptable. True	
Cooler Temperature is recorded. True	
COC is present. True	
COC is filled out in ink and legible.	
COC is filled out with all pertinent information.	
Is the Field Sampler's name present on COC?	Rick B
There are no discrepancies between the sample IDs on the containers and the COC.	
Samples are received within Holding Time.	
Sample containers have legible labels. True	
Containers are not broken or leaking.	
Sample collection date/times are provided. True	
Appropriate sample containers are used. True	
Sample bottles are completely filled. True	
Sample Preservation Verified.	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in True diameter.	
Multiphasic samples are not present. True	
Samples do not require splitting or compositing.	
Residual Chlorine Checked. N/A	

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12

Login Sample Receipt Checklist

Client: MWH Americas Inc Job Number: 440-8620-1

Login Number: 8693 List Source: TestAmerica Irvine

List Number: 1 Creator: Perez, Angel

Greator: 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	

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APPENDIX G

Section 9

Outfall 009 – April 11, 2012 MECX Data Validation Report



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-8315-1

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: 440-8315-1

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 009 Composite	440-8443-1	G2D160418-001, S204064-01	Water	4/11/2012 8:31:00 PM	1613B, 245.1,, 900. 901.1, 903.1, 904, 905, 906, SM 2540D, ASTM D5174

II. Sample Management

No anomalies were observed regarding sample management. Eberline did not note the temperature upon receipt; however, due to the nonvolatile nature of the analytes, qualifications were not required. The samples were received nominally below the control limit at TestAmerica-West Sacramento; however, as the samples were not noted to be frozen or damaged, no qualifications were required. The samples in this SDG were received at the TestAmerica-Irvine 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 upon receipt at TestAmerica-West Sacramento. As the samples were delivered to TestAmerica-Irvine by courier, custody seals were not required. No custody seals were utilized by TestAmerica-Irvine to ship the samples via FedEx to Eberline. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Qualifie	r 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
Н	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
С	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.
В	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.
Е	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
Α	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
Т	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.
Р	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.
*11, *111	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: June 4, 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.
 - o 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.
 - o 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: Blanks: The following were not detected in the method blank: 2,3,7,8-TCDD, 1,2,3,7,8-PeCDD, 1,2,3,6,7,8-HxCDD, 2,3,4,7,8-PeCDF, 1,2,3,6,7,8-HxCDF, and totals for TCDD and PeCDD,. The method blank had detects reported above the EDL for all remaining target compounds and totals. Most of the method blank results were reported as EMPCs; however, the reviewer deemed it appropriate to evaluate all method blank

results for the purpose of qualifying sample results. Individual isomer results detected in the sample between the EDL and the reporting limit were qualified as nondetected "U," at the level of contamination. The method blank concentrations of OCDD and 1,2,3,4,6,7,8-HpCDD, and total HpCDD were insufficient to qualify the sample results. Remaining totals for method blank contaminants were qualified as estimated, "J," as only a portion of the total was considered method blank contamination.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613.
- 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 for all internal standards.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. A confirmation analysis was performed for 2,3,7,8-TCDF. The original result was confirmed; however, the original result was reported as method blank contamination, and the confirmation result was reported as an EMPC. The original result was rejected, "R," in favor of the confirmation result, which was more isomer-specific for 2,3,7,8-TCDF. The confirmation result was subsequently qualified as nondetected (see Compound Quantification and Reported Detection Limits section).
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any reportable sample 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.

Results reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Results for individual isomers reported as EMPCs were qualified as estimated nondetects, "UJ," at the level of the EMPC. Total PeCDD was also qualified as an estimated nondetect, "UJ," at the level of

the EMPC, as the total was the single isomer, also qualified. Remaining totals containing isomers reported as EMPCs or other EMPC peaks were qualified as estimated, "J."

B. EPA METHOD 245.1—Mercury

Reviewed By: P. Meeks Date Reviewed: June 5, 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: The analytical holding time, 28 days for mercury, was met.
- Calibration: Calibration criteria were met. Mercury initial calibration r² values were ≥0.995 and all initial and continuing calibration recoveries were within 85-115%. CRI recoveries were within the control limits of 70-130%.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Not applicable to this analysis.
- Blank Spikes and Laboratory Control Samples: Recoveries and the RPD were within method-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG for dissolved mercury. The recoveries and RPD were within the methodestablished control limits.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards Performance: Not applicable to this analysis.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

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

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
- Field Duplicates: There were no field duplicate samples identified for this SDG.

C. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks Date Reviewed: June 5, 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.

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 laboratoryestablished control limits.
- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG for all analytes. The gross beta RPD exceeded the control limit; however, as the results were within the reported error, no qualifications were applied. The remaining RPDs were within the laboratory-established control limits.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.

Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples.
 Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

D. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks Date Reviewed: June 5, 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), Standard Method SM 2540D, and the National Functional Guidelines for Inorganic Data Review (7/02).

- Holding Times: The analytical holding time, seven days for TSS, was met.
- Calibration: The balance calibration logs were considered acceptable.
- Blanks: The method blank had no detect for TSS.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratoryestablished QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer

was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - o Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms 440-8315-1

Analysis Method 1613B

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

Lab Sample Name: 440-8443-1 **Sample Date:** 4/11/2012 8:31:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	0.000073	0.000050	0.0000005	ug/L			
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000050	0.0000004	ug/L	J B	U	В
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000050	0.0000005	ug/L	J B	U	В
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000050	0.0000004	ug/L	J Q B	U	В
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000050	0.0000000	ug/L	J Q B	U	В
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000050	0.0000004	ug/L	1 Q	UJ	*III
1,2,3,6,7,8-HxCDF	57117-44-9	0.000004	0.000050	0.0000000	ug/L	J	J	DNQ
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000050	0.0000004	ug/L	J B	U	В
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000050	0.0000000	ug/L	J B	U	В
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000050	0.0000006	ug/L	J Q	UJ	*III
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000050	0.0000006	ug/L	J B	U	В
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.000050	0.0000030	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000050	0.0000006	ug/L	1 Q	UJ	*III
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	0.000010	0.0000019	ug/L	J Q	UJ	*III
2,3,7,8-TCDF	51207-31-9	0.000004	0.000010	0.0000006	ug/L	J B	R	D
OCDD	3268-87-9	0.00073	0.00010	0.0000018	ug/L	В		
OCDF	39001-02-0	ND	0.00010	0.0000003	ug/L	J B	U	В
Total HpCDD	37871-00-4	0.00017	0.000050	0.0000005	ug/L	В		
Total HpCDF	38998-75-3	0.000058	0.000050	0.0000005	ug/L	J Q B	J	B, DNQ, *III
Total HxCDD	34465-46-8	0.000024	0.000050	0.0000004	ug/L	J Q B	J	B, DNQ, *III
Total HxCDF	55684-94-1	0.000039	0.000050	0.0000000	ug/L	J Q B	J	B, DNQ, *III
Total PeCDD	36088-22-9	ND	0.000050	0.0000006	ug/L	1 Q	UJ	*III
Total PeCDF	30402-15-4	0.000023	0.000050	0.0000006	ug/L	J Q B	J	B, DNQ, *III
Total TCDD	41903-57-5	ND	0.000010	0.0000008	ug/L		U	
Total TCDF	55722-27-5	0.000019	0.000010	0.0000006	ug/L	J Q B	J	B, DNQ, *III

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Analysis	Mathad	245.1
Anaivsis	wieinoa	Z4.). I

Sample Name	Outfall 009 C	omposite	Matri	x Type:	Water	7	alidation Le	vel: IV
Lab Sample Name:	440-8443-1	Sam	ple Date:	4/11/2012	2 8:31:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/L		U	
Mercury, Dissolved	7439-97-6	ND	0.20	0.10	ug/L		U	
Analysis Metho	d Gamr	na Spec	c K-40	CS-13	7			
Sample Name	Outfall 009 C	omposite	Matri	x Type:	Water	7	alidation Le	vel: IV
Lab Sample Name:	440-8443-1	Sam	ple Date:	4/11/2012	2 8:31:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	0.386	20	4.96	pCi/L	U	U	
Potassium-40	13966002	1.85	25	57.4	pCi/L	U	U	
Analysis Metho	d Gross	s Alpha	and Be	eta				
Sample Name	Outfall 009 C	omposite	Matri	х Туре:	Water	7	alidation Le	vel: IV
Lab Sample Name:	440-8443-1	Sam	ple Date:	4/11/2012	2 8:31:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	1.23	3	0.347	pCi/L	J	J	DNQ
Gross Beta	12587472	2.29	4	1.08	pCi/L	J	J	DNQ
Analysis Metho	1 D 1	226						
THUNIYOUS MICHIO	d Kadii	ım 226						
Sample Name	Outfall 009 C		Matri	х Туре:	Water	1	alidation Le	vel: IV
		omposite			Water 2 8:31:00 PM		Validation Le	vel: IV
Sample Name Lab Sample Name:	Outfall 009 C	omposite						vel: IV Validation Notes
Sample Name Lab Sample Name: Analyte	Outfall 009 C	Composite Sam Result	ple Date:	4/11/2012	2 8:31:00 PM Result	Lab	Validation	Validation
Sample Name Lab Sample Name: Analyte	Outfall 009 C 440-8443-1 CAS No	omposite Sam Result Value	ple Date:	4/11/2012 MDL	2 8:31:00 PM Result Units	Lab Qualifier	Validation Qualifier	Validation
Sample Name Lab Sample Name: Analyte Radium-226	Outfall 009 C 440-8443-1 CAS No	Sam Result Value 0.126 um 228	ple Date: RL	4/11/2012 MDL 0.509	2 8:31:00 PM Result Units	Lab Qualifier U	Validation Qualifier	Validation Notes
Sample Name Lab Sample Name: Analyte Radium-226 Analysis Metho	Outfall 009 C 440-8443-1 CAS No 13982633 d Radiu	Result Value 0.126 um 228 composite	ple Date: RL	4/11/2012 MDL 0.509	Result Units pCi/L	Lab Qualifier U	Validation Qualifier U	Validation Notes
Sample Name Lab Sample Name: Analyte Radium-226 Analysis Metho Sample Name	Outfall 009 C 440-8443-1 CAS No 13982633 d Radiu Outfall 009 C	Result Value 0.126 um 228 composite	RL Matri	4/11/2012 MDL 0.509	Result Units pCi/L	Lab Qualifier U	Validation Qualifier U	Validation Notes

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Analysis Method SM 2540D

Sample Name	Outfall 009 C	omposite	Matr	ix Type:	Water	7	Validation Le	vel: IV
Lab Sample Name:	440-8443-1	Sam	ple Date:	4/11/201	2 8:31:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	STL00161	16	10	10	mg/L			
Analysis Metho	od Stron	tium 90)					
Sample Name	Outfall 009 C	omposite	Matr	ix Type:	Water	7	Validation Le	vel: IV
Lab Sample Name:	440-8443-1	Sam	ple Date:	4/11/201	2 8:31:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.156	2	0.943	pCi/L	U	U	
Analysis Metho	od Tritiu	m						
Sample Name	Outfall 009 C	omposite	Matr	ix Type:	Water	7	alidation Le	vel: IV
Lab Sample Name:	440-8443-1	Sam	ple Date:	4/11/201	2 8:31:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	-72.3	500	176	pCi/L	U	U	
Analysis Metho	od Uran	ium, Co	ombine	d				
Sample Name	Outfall 009 C	omposite	Matr	іх Туре:	Water	Validation Level: IV		
Lab Sample Name:	440-8443-1	Sam	ple Date:	4/11/201	2 8:31:00 PM			
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total		0.074	1	0.019	pCi/L	J	J	DNQ

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