

# **APPENDIX G**

## **Section 5**

Outfall 002 – April 13, 2012

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





# DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-8624-1

Prepared by

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**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<br>8:35:00 AM | 120.1  |
| Outfall 002<br>Composite | 440-8694-1    | S204070-01        | Water  | 4/13/2012<br>5:54:00 PM | 1613B, 180.1, 200.7, 314.0, 900.<br>901.1, 903.1, 904, 905, 906, SM<br>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

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

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### Qualification Code Reference Table

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

**Qualification Code Reference Table Cont.**

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

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### 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<sup>x</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (8/02)*.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
  - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.
  - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.
- Calibration: Calibration criteria were met.
  - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs  $\leq 20\%$  for the 15 native compounds (calibration by isotope dilution) and  $\leq 35\%$  for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.
  - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The 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<sup>X</sup> 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  $r^2$  values were  $\geq 0.995$  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 laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Serial Dilution: No serial dilution analyses were performed.
- 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<sup>X</sup> 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  $r^2$  values were  $\geq 0.995$  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 method-established 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  $\pm 5\%$  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<sup>x</sup> 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 laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were not performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-”; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
  - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
  - Field Duplicates: There were no field duplicate samples identified for this SDG.

# Validated Sample Result Forms 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 Value | RL  | MDL | Result Units | Lab Qualifier | Validation Qualifier | Validation 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                    | B                |
| 1,2,3,4,6,7,8-HpCDF | 67562-39-4 | ND           | 0.000050 | 0.0000000 | ug/L         | J Q B         | U                    | B                |
| 1,2,3,4,7,8,9-HpCDF | 55673-89-7 | ND           | 0.000050 | 0.0000001 | ug/L         | J Q B         | U                    | B                |
| 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                    | B                |
| 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         | J Q B         | U                    | B                |
| 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                    | B                |
| 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         | J Q B         | U                    | B                |
| 2,3,4,6,7,8-HxCDF   | 60851-34-5 | ND           | 0.000050 | 0.0000000 | ug/L         | J Q B         | U                    | B                |
| 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         | J Q           | R                    | D                |
| OCDD                | 3268-87-9  | 0.00011      | 0.00010  | 0.0000000 | ug/L         | B             |                      |                  |
| OCDF                | 39001-02-0 | ND           | 0.00010  | 0.0000000 | ug/L         | J B           | U                    | B                |
| Total HpCDD         | 37871-00-4 | ND           | 0.000050 | 0.0000000 | ug/L         | J B           | U                    | B                |
| Total HpCDF         | 38998-75-3 | ND           | 0.000050 | 0.0000001 | ug/L         | J Q B         | U                    | B                |
| 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                    | B                |
| 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                    | B                |
| Total TCDD          | 41903-57-5 | ND           | 0.000010 | 0.0000000 | ug/L         | J Q B         | U                    | B                |
| Total TCDF          | 55722-27-5 | 0.000003     | 0.000010 | 0.0000001 | ug/L         | J Q           | J                    | DNQ, *III        |

*Analysis Method 180.1*

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Turbidity               | STL00189              | 52                  | 0.20                 | 0.080                    | NTU                 |                      | J                           | R                       |

*Analysis Method 200.7 Rev 4.4*

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| 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 245.1*

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Mercury                 | 7439-97-6             | ND                  | 0.20                 | 0.10                     | ug/L                |                      | U                           |                         |
| Mercury, Dissolved      | 7439-97-6             | ND                  | 0.20                 | 0.10                     | ug/L                |                      | U                           |                         |

*Analysis Method 314.0*

|                         |                       |                     |                      |                          |                     |                      |                             |                          |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|--------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                          |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                          |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b>  |
| Perchlorate             | 14797-73-0            | ND                  | 4.0                  | 0.95                     | ug/L                |                      | UJ                          | H, Q, \$, result from 20 |

*Analysis Method Gamma Spec K-40 CS-137*

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Cesium-137              | 10045973              | 0.152               | 20                   | 1.58                     | pCi/L               | U                    | U                           |                         |
| Potassium-40            | 13966002              | -4.54               | 25                   | 26.9                     | pCi/L               | U                    | U                           |                         |

*Analysis Method*    *Gross Alpha and Beta*

---

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Gross Alpha             | 12587461              | 1.34                | 3                    | 1.26                     | pCi/L               | J                    | J                           | C, DNQ                  |
| Gross Beta              | 12587472              | 4.81                | 4                    | 1.44                     | pCi/L               |                      |                             |                         |

---

*Analysis Method*    *Radium 226*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Radium-226              | 13982633              | 0.266               | 1                    | 0.587                    | pCi/L               | U                    | U                           |                         |

---

*Analysis Method*    *Radium 228*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Radium-228              | 15262201              | 0.295               | 1                    | 0.382                    | pCi/L               | U                    | U                           |                         |

---

*Analysis Method*    *SM 2540D*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Total Suspended Solids  | STL00161              | 53                  | 10                   | 10                       | mg/L                |                      |                             |                         |

---

*Analysis Method*    *Strontium 90*

---

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Strontium-90            | 10098972              | -0.131              | 2                    | 0.835                    | pCi/L               | U                    | UJ                          | L                       |

---

*Analysis Method*    *Tritium*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Tritium                 | 10028178              | 19.4                | 500                  | 148                      | pCi/L               | U                    | U                           |                         |

---

*Analysis Method*    *Uranium, Combined*

---

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 002 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8694-1            | <b>Sample Date:</b> | 4/13/2012 5:54:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Uranium, Total          | NA                    | 0.172               | 1                    | 0.018                    | pCi/L               | J                    | J                           | L,DNQ                   |

---

## **APPENDIX G**

### **Section 6**

Outfall 002 – April 13, 2012

Test America Analytical Laboratory Report



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-8624-1

Client Project/Site: Routine Outfall 002 Grab

For:

MWH Americas Inc

618 Michillinda Avenue, Suite 200

Arcadia, California 91007

Attn: Bronwyn Kelly



Authorized for release by:

5/20/2012 3:44:43 PM

Debby Wilson

Project Manager I

[debby.wilson@testamericainc.com](mailto:debby.wilson@testamericainc.com)

### LINKS

Review your project  
results through

Total Access

Have a Question?



Visit us at:

[www.testamericainc.com](http://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.*

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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  
Project Manager I  
5/20/2012 3:44:43 PM



# Table of Contents

|                                 |     |
|---------------------------------|-----|
| Cover Page . . . . .            | 1   |
| Table of Contents . . . . .     | 3   |
| Sample Summary . . . . .        | 4   |
| Case Narrative . . . . .        | 5   |
| Client Sample Results . . . . . | 7   |
| Chronicle . . . . .             | 12  |
| QC Sample Results . . . . .     | 14  |
| QC Association . . . . .        | 35  |
| Definitions . . . . .           | 42  |
| Certification Summary . . . . . | 43  |
| Subcontract Data . . . . .      | 44  |
| Chain of Custody . . . . .      | 105 |
| Receipt Checklists . . . . .    | 108 |

# Sample Summary

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

| Lab Sample ID | Client Sample ID      | Matrix | Collected      | Received       |
|---------------|-----------------------|--------|----------------|----------------|
| 440-8624-1    | Outfall 002           | Water  | 04/13/12 08:35 | 04/13/12 19:00 |
| 440-8624-2    | Trip Blanks           | Water  | 04/13/12 08:35 | 04/13/12 19:00 |
| 440-8694-1    | Outfall 002 Composite | Water  | 04/13/12 17:54 | 04/14/12 16:15 |
| 440-8694-2    | Trip Blank            | Water  | 04/13/12 17:54 | 04/14/12 16:15 |

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# Case Narrative

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

**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

# 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.

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

## Client Sample ID: Outfall 002

Lab Sample ID: 440-8624-1

Date Collected: 04/13/12 08:35

Matrix: Water

Date Received: 04/13/12 19:00

### Method: 624 - Volatile Organic Compounds (GC/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

Matrix: Water

Date Received: 04/13/12 19:00

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

| 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

Matrix: Water

Date Received: 04/14/12 16:15

### Method: 625 - Semivolatile Organic Compounds (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       |

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

**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

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

| Surrogate | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|-----------|-----------|-----------|----------|----------------|----------------|---------|
| Phenol-d6 | 93        |           | 35 - 120 | 04/20/12 14:44 | 04/23/12 01:23 | 1       |

**Method: 608 Pesticides - Organochlorine Pesticides Low level**

| Analyte              | Result    | Qualifier | RL       | MDL            | Unit           | D       | Prepared       | Analyzed       | Dil 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 |                |                |         |
| Tetrachloro-m-xylene | 62        |           | 35 - 115 | 04/15/12 14:34 | 04/16/12 16:31 | 1       |                |                |         |

**Method: 300.0 - Anions, Ion Chromatography**

| 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    |
| <b>Total TCDD</b>          | <b>0.0000039</b> | <b>J Q B</b> | 0.000010 | 0.00000040 | 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    |
| <b>1,2,3,4,6,7,8-HpCDD</b> | <b>0.000012</b>  | <b>J B</b>   | 0.000050 | 0.00000030 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>Total HpCDD</b>         | <b>0.000025</b>  | <b>J B</b>   | 0.000050 | 0.00000030 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>OCDD</b>                | <b>0.00011</b>   | <b>B</b>     | 0.00010  | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>2,3,7,8-TCDF</b>        | <b>0.0000018</b> | <b>J Q</b>   | 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 | 0.00000022 | ug/L |   | 04/23/12 09:00 | 04/25/12 04:53 | 0.98    |
| <b>Total TCDF</b>          | <b>0.0000036</b> | <b>J Q</b>   | 0.000010 | 0.00000014 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>1,2,3,7,8-PeCDF</b>     | <b>0.0000034</b> | <b>J Q B</b> | 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    |
| <b>Total PeCDF</b>         | <b>0.0000034</b> | <b>J Q B</b> | 0.000050 | 0.00000034 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>1,2,3,4,7,8-HxCDF</b>   | <b>0.0000053</b> | <b>J Q B</b> | 0.000050 | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>1,2,3,6,7,8-HxCDF</b>   | <b>0.0000014</b> | <b>J Q B</b> | 0.000050 | 0.00000030 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>2,3,4,6,7,8-HxCDF</b>   | <b>0.0000016</b> | <b>J Q B</b> | 0.000050 | 0.00000030 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>1,2,3,7,8,9-HxCDF</b>   | <b>0.0000016</b> | <b>J B</b>   | 0.000050 | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>Total HxCDF</b>         | <b>0.000017</b>  | <b>J Q B</b> | 0.000050 | 0.00000030 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>1,2,3,4,6,7,8-HpCDF</b> | <b>0.0000071</b> | <b>J Q B</b> | 0.000050 | 0.00000010 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>1,2,3,4,7,8,9-HpCDF</b> | <b>0.0000030</b> | <b>J Q B</b> | 0.000050 | 0.00000014 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>Total HpCDF</b>         | <b>0.000019</b>  | <b>J Q B</b> | 0.000050 | 0.00000013 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |
| <b>OCDF</b>                | <b>0.000018</b>  | <b>J B</b>   | 0.00010  | 0.00000070 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:15 | 0.98    |

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

**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**

| 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    |
| 37Cl4-2,3,7,8-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    |

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

| Analyte | Result | Qualifier | RL    | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|-------|-------|------|---|----------------|----------------|---------|
| Iron    | 1.7    |           | 0.040 | 0.015 | mg/L |   | 04/24/12 09:36 | 04/24/12 21:17 | 1       |
| Zinc    | 8.3    | J,DX      | 20    | 6.0   | ug/L |   | 04/24/12 09:36 | 04/24/12 21:17 | 1       |

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

| Analyte | Result | Qualifier | RL    | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|-------|-------|------|---|----------------|----------------|---------|
| Iron    | 0.045  |           | 0.040 | 0.015 | mg/L |   | 04/23/12 10:11 | 04/24/12 13:06 | 1       |
| Zinc    | ND     |           | 20    | 6.0   | ug/L |   | 04/23/12 10:11 | 04/24/12 13:06 | 1       |

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

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Cadmium  | ND     |           | 1.0 | 0.10 | ug/L |   | 04/23/12 17:06 | 04/28/12 19:10 | 1       |
| Copper   | 2.3    |           | 2.0 | 0.50 | ug/L |   | 04/23/12 17:06 | 04/28/12 19:10 | 1       |
| Lead     | 0.87   | J,DX      | 1.0 | 0.20 | ug/L |   | 04/23/12 17:06 | 04/28/12 19:10 | 1       |
| Selenium | 0.51   | J,DX      | 2.0 | 0.50 | ug/L |   | 04/23/12 17:06 | 04/28/12 19:10 | 1       |

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

| Analyte  | Result | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------|--------|-----------|-----|------|------|---|----------------|----------------|---------|
| Cadmium  | ND     |           | 1.0 | 0.10 | ug/L |   | 04/23/12 10:08 | 05/01/12 23:03 | 1       |
| Copper   | 1.8    | J,DX      | 2.0 | 0.50 | ug/L |   | 04/23/12 10:08 | 05/01/12 23:03 | 1       |
| Lead     | ND     |           | 1.0 | 0.20 | ug/L |   | 04/23/12 10:08 | 05/01/12 23:03 | 1       |
| Selenium | ND     |           | 2.0 | 0.50 | ug/L |   | 04/23/12 10:08 | 05/01/12 23:03 | 1       |

**Method: 245.1 - Mercury (CVAA)**

| Analyte | Result | Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|------|------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.20 | 0.10 | ug/L |   | 04/16/12 15:03 | 04/17/12 12:54 | 1       |

**Method: 245.1 - Mercury (CVAA) - Dissolved**

| Analyte | Result | Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|------|------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.20 | 0.10 | ug/L |   | 04/17/12 08:33 | 04/18/12 13:23 | 1       |

# Client Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

**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

### 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-137 - General Sub Contract 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/Beta

| 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 Sub Contract Method

| 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-226-228 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 Sub Contract Method

| Analyte      | Result | Qualifier | RL | MDL | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|--------------|--------|-----------|----|-----|-------|---|----------------|----------------|---------|
| Strontium-90 | -0.131 | U         | 2  |     | pCi/L |   | 04/26/12 00:00 | 04/26/12 12:35 | 1       |

### Method: Tritium - General Sub Contract Method

| 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 - General Sub Contract Method

| 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**

**Lab Sample ID: 440-8694-2**

Date Collected: 04/13/12 17:54

Matrix: Water

Date Received: 04/14/12 16:15

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

| Analyte      | Result | Qualifier | RL | MDL | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|--------------|--------|-----------|----|-----|-------|---|----------------|----------------|---------|
| Cesium-137   | 0.52   | 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/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       |
| Gross Beta  | -0.018 | U         | 4  |     | pCi/L |   | 04/26/12 00:00 | 04/30/12 08:23 | 1       |

# 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

**Method: Radium 226 - General Sub Contract Method**

| 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 - RAD-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 - General Sub Contract Method**

| Analyte      | Result | Qualifier | RL | MDL | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|--------------|--------|-----------|----|-----|-------|---|----------------|----------------|---------|
| Strontium-90 | -0.012 | U         | 2  |     | pCi/L |   | 04/26/12 00:00 | 04/26/12 12:35 | 1       |

**Method: Uranium, Combined - General Sub Contract Method**

| Analyte        | Result | Qualifier | RL | MDL | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|----------------|--------|-----------|----|-----|-------|---|----------------|----------------|---------|
| Uranium, Total | 0      | U         | 1  |     | pCi/L |   | 04/27/12 00:00 | 04/27/12 09:03 | 1       |

# Lab Chronicle

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

## Client Sample ID: Outfall 002

Lab Sample ID: 440-8624-1

Date Collected: 04/13/12 08:35

Matrix: Water

Date Received: 04/13/12 19:00

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624          |     | 1          | 10 mL          | 10 mL        | 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

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624          |     | 1          | 10 mL          | 10 mL        | 20084        | 04/17/12 05:40       | 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 | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-------------------|------------|----------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA          | Prep       | 625            |     |            | 1060 mL        | 2 mL         | 21041        | 04/20/12 14:44       | LA      | TAL IRV |
| Total/NA          | Analysis   | 625            |     | 1          |                |              | 21217        | 04/23/12 01:23       | AI      | 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 WSC |
| Total             | Analysis   | 1613B          |     | 0.98       |                |              | 2114077      | 04/24/12 22:15       | SO      | TAL WSC |
| Total             | Analysis   | 1613B          |     | 0.98       |                |              | 2114077      | 04/25/12 04:53       | SO      | TAL WSC |
| 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 |

# Lab Chronicle

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

## 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 | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab       |
|-----------|------------|---------------------------|-----|------------|----------------|--------------|--------------|----------------------|---------|-----------|
| Total/NA  | Analysis   | SM5210B                   |     | 1          |                |              | 19862        | 04/15/12 12:00       | RS      | 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 2540D                  |     | 1          | 100 mL         | 100 mL       | 21096        | 04/20/12 19:12       | 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  | Analysis   | Gamma Spec K-40<br>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<br>Beta   |     | 1          |                |              | 8612         | 05/01/12 08:47       | 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       | 04/19/12 00:00       |         | Eber-Rich |
| Total/NA  | Analysis   | Tritium                   |     | 1          |                |              | 8612         | 04/19/12 20:21       | WL      | 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 08:58       | LS      | Eber-Rich |

## 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

| Prep Type | Batch Type | Batch Method              | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab       |
|-----------|------------|---------------------------|-----|------------|----------------|--------------|--------------|----------------------|---------|-----------|
| Total/NA  | Analysis   | Gamma Spec K-40<br>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<br>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

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

## 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**

| Analyte            | MB     | MB        | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|--------------------|--------|-----------|------|------|------|---|----------|----------------|---------|
|                    | Result | Qualifier |      |      |      |   |          |                |         |
| 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       |

| Surrogate                   | MB        | MB        | Limits   | Prepared | Analyzed       | Dil Fac |
|-----------------------------|-----------|-----------|----------|----------|----------------|---------|
|                             | %Recovery | Qualifier |          |          |                |         |
| 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       |

**Lab Sample ID: LCS 440-20084/5**

**Matrix: Water**

**Analysis Batch: 20084**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

| Analyte            | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec. Limits |
|--------------------|-------------|--------|-----------|------|---|------|--------------|
|                    |             | Result | Qualifier |      |   |      |              |
| 1,1-Dichloroethene | 25.0        | 23.8   |           | ug/L |   | 95   | 70 - 125     |
| 1,2-Dichloroethane | 25.0        | 25.5   |           | ug/L |   | 102  | 60 - 140     |
| Trichloroethene    | 25.0        | 27.1   |           | ug/L |   | 108  | 70 - 125     |

| Surrogate                   | LCS       | LCS       | Limits   |
|-----------------------------|-----------|-----------|----------|
|                             | %Recovery | Qualifier |          |
| 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**

| Analyte            | Sample | Sample    | Spike Added | MS     | MS        | Unit | D | %Rec | %Rec. Limits |
|--------------------|--------|-----------|-------------|--------|-----------|------|---|------|--------------|
|                    | Result | Qualifier |             | Result | Qualifier |      |   |      |              |
| 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     |

| Surrogate                   | MS        | MS        | Limits   |
|-----------------------------|-----------|-----------|----------|
|                             | %Recovery | Qualifier |          |
| 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**

| Analyte            | Sample | Sample    | Spike Added | MSD    | MSD       | Unit | D | %Rec | %Rec. Limits | RPD  | RPD Limit |
|--------------------|--------|-----------|-------------|--------|-----------|------|---|------|--------------|------|-----------|
|                    | Result | Qualifier |             | Result | Qualifier |      |   |      |              |      |           |
| 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        |

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

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

## 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**

| Surrogate                   | MSD       |           | Limits   |
|-----------------------------|-----------|-----------|----------|
|                             | %Recovery | Qualifier |          |
| Dibromofluoromethane (Surr) | 98        |           | 80 - 120 |
| Toluene-d8 (Surr)           | 103       |           | 80 - 120 |

**Lab Sample ID: MB 440-20297/4**  
**Matrix: Water**  
**Analysis Batch: 20297**

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

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

| Surrogate                   | MB        |           | Limits   | Prepared | Analyzed       | Dil Fac |
|-----------------------------|-----------|-----------|----------|----------|----------------|---------|
|                             | %Recovery | Qualifier |          |          |                |         |
| 4-Bromofluorobenzene (Surr) | 109       |           | 80 - 120 |          | 04/17/12 18:28 | 1       |
| Dibromofluoromethane (Surr) | 101       |           | 80 - 120 |          | 04/17/12 18:28 | 1       |
| Toluene-d8 (Surr)           | 104       |           | 80 - 120 |          | 04/17/12 18:28 | 1       |

**Lab Sample ID: LCS 440-20297/5**  
**Matrix: Water**  
**Analysis Batch: 20297**

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

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

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

**Lab Sample ID: 440-8650-A-3 MS**  
**Matrix: Water**  
**Analysis Batch: 20297**

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

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

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

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

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

**Matrix: Water**

**Analysis Batch: 20297**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

| Analyte                     | Sample    | Sample    | Spike Added    | MSD    | MSD       | Unit | D | %Rec | %Rec.    | RPD  | Limit |
|-----------------------------|-----------|-----------|----------------|--------|-----------|------|---|------|----------|------|-------|
|                             | Result    | Qualifier |                | Result | Qualifier |      |   |      | Limits   |      |       |
| 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    |
|                             |           |           | <b>MSD MSD</b> |        |           |      |   |      |          |      |       |
| Surrogate                   | %Recovery | Qualifier | Limits         |        |           |      |   |      |          |      |       |
| 4-Bromofluorobenzene (Surr) | 110       |           | 80 - 120       |        |           |      |   |      |          |      |       |
| Dibromofluoromethane (Surr) | 103       |           | 80 - 120       |        |           |      |   |      |          |      |       |
| Toluene-d8 (Surr)           | 104       |           | 80 - 120       |        |           |      |   |      |          |      |       |

**Lab Sample ID: MB 440-20367/4**

**Matrix: Water**

**Analysis Batch: 20367**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

| Analyte                     | MB        | MB        | RL           | MDL  | Unit     | D              | Prepared | Analyzed       | Dil Fac |
|-----------------------------|-----------|-----------|--------------|------|----------|----------------|----------|----------------|---------|
|                             | Result    | Qualifier |              |      |          |                |          |                |         |
| 1,1-Dichloroethene          | ND        |           | 0.50         | 0.42 | ug/L     |                |          | 04/18/12 08:57 | 1       |
| 1,2-Dichloroethane          | ND        |           | 0.50         | 0.28 | ug/L     |                |          | 04/18/12 08:57 | 1       |
| Trichloroethene             | ND        |           | 0.50         | 0.26 | ug/L     |                |          | 04/18/12 08:57 | 1       |
|                             |           |           | <b>MB MB</b> |      |          |                |          |                |         |
| Surrogate                   | %Recovery | Qualifier | Limits       |      | Prepared | Analyzed       | Dil Fac  |                |         |
| 4-Bromofluorobenzene (Surr) | 89        |           | 80 - 120     |      |          | 04/18/12 08:57 | 1        |                |         |
| Dibromofluoromethane (Surr) | 94        |           | 80 - 120     |      |          | 04/18/12 08:57 | 1        |                |         |
| Toluene-d8 (Surr)           | 101       |           | 80 - 120     |      |          | 04/18/12 08:57 | 1        |                |         |

**Lab Sample ID: LCS 440-20367/6**

**Matrix: Water**

**Analysis Batch: 20367**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

| Analyte                     | Spike Added | LCS       | LCS            | Unit | D | %Rec | %Rec.    | RPD | Limit |
|-----------------------------|-------------|-----------|----------------|------|---|------|----------|-----|-------|
|                             |             | Result    | Qualifier      |      |   |      | 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 |     |       |
|                             |             |           | <b>LCS LCS</b> |      |   |      |          |     |       |
| Surrogate                   | %Recovery   | Qualifier | Limits         |      |   |      |          |     |       |
| 4-Bromofluorobenzene (Surr) | 100         |           | 80 - 120       |      |   |      |          |     |       |
| Dibromofluoromethane (Surr) | 94          |           | 80 - 120       |      |   |      |          |     |       |
| Toluene-d8 (Surr)           | 98          |           | 80 - 120       |      |   |      |          |     |       |

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

**Matrix: Water**

**Analysis Batch: 20367**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

| Analyte                     | Sample    | Sample    | Spike Added  | MS     | MS        | Unit | D | %Rec | %Rec.    | RPD | Limit |
|-----------------------------|-----------|-----------|--------------|--------|-----------|------|---|------|----------|-----|-------|
|                             | Result    | Qualifier |              | Result | Qualifier |      |   |      | 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 |     |       |
|                             |           |           | <b>MS MS</b> |        |           |      |   |      |          |     |       |
| Surrogate                   | %Recovery | Qualifier | Limits       |        |           |      |   |      |          |     |       |
| 4-Bromofluorobenzene (Surr) | 99        |           | 80 - 120     |        |           |      |   |      |          |     |       |

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

**Lab Sample ID: 440-8281-B-1 MS**  
**Matrix: Water**  
**Analysis Batch: 20367**

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

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

**Lab Sample ID: 440-8281-B-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 20367**

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

| Analyte            | Sample | Sample    | Spike | MSD    | MSD       | Unit | D | %Rec | %Rec.    | Limits | RPD | RPD | Limit |
|--------------------|--------|-----------|-------|--------|-----------|------|---|------|----------|--------|-----|-----|-------|
|                    | Result | Qualifier |       | Result | Qualifier |      |   |      |          |        |     |     |       |
| 1,1-Dichloroethene | ND     |           | 25.0  | 24.9   |           | ug/L |   | 100  | 60 - 130 | 1      | 20  |     |       |
| 1,2-Dichloroethane | ND     |           | 25.0  | 25.0   |           | ug/L |   | 100  | 60 - 140 | 0      | 20  |     |       |
| Trichloroethene    | 1.2    |           | 25.0  | 26.3   |           | ug/L |   | 100  | 65 - 125 | 0      | 20  |     |       |

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

| Analyte                     | MB     | MB        | RL   | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------------------------|--------|-----------|------|-------|------|---|----------------|----------------|---------|
|                             | Result | Qualifier |      |       |      |   |                |                |         |
| Bis(2-ethylhexyl) phthalate | ND     |           | 5.00 | 1.70  | 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       |
| 2,4,6-Trichlorophenol       | ND     |           | 1.00 | 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       |
| N-Nitrosodimethylamine      | ND     |           | 2.00 | 0.100 | ug/L |   | 04/20/12 14:44 | 04/22/12 17:08 | 1       |

| Surrogate            | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|----------------------|-----------|-----------|----------|----------------|----------------|---------|
|                      | %Recovery | Qualifier |          |                |                |         |
| 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**

| Analyte                     | Spike | LCS   | LCS | Unit | D | %Rec | %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 |        |

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

## 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**

| Surrogate            | LCS       |           | Limits   |
|----------------------|-----------|-----------|----------|
|                      | %Recovery | Qualifier |          |
| 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**

**Analysis Batch: 21217**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 21041**

| Analyte                     | Sample | Sample    | Spike | MS     |           | Unit | D | %Rec | %Rec.    | Limits |
|-----------------------------|--------|-----------|-------|--------|-----------|------|---|------|----------|--------|
|                             | Result | Qualifier |       | Result | Qualifier |      |   |      |          |        |
| 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 |        |

| Surrogate            | MS        |           | Limits   |
|----------------------|-----------|-----------|----------|
|                      | %Recovery | Qualifier |          |
| 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**

| Analyte                     | Sample | Sample    | Spike | MSD    |           | Unit | D | %Rec | %Rec.    | Limits | RPD |       |
|-----------------------------|--------|-----------|-------|--------|-----------|------|---|------|----------|--------|-----|-------|
|                             | Result | Qualifier |       | Result | Qualifier |      |   |      |          |        | 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  |       |

| Surrogate            | MSD       |           | Limits   |
|----------------------|-----------|-----------|----------|
|                      | %Recovery | Qualifier |          |
| 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 |

# QC Sample Results

Client: MWH Americas Inc  
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

| Analyte   | MB Result | MB Qualifier | RL     | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|-----------|--------------|--------|--------|------|---|----------------|----------------|---------|
| alpha-BHC | ND        |              | 0.0050 | 0.0025 | ug/L |   | 04/15/12 14:34 | 04/16/12 12:21 | 1       |

| Surrogate            | MB %Recovery | MB Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|----------------------|--------------|--------------|----------|----------------|----------------|---------|
| Tetrachloro-m-xylene | 82           |              | 35 - 115 | 04/15/12 14:34 | 04/16/12 12:21 | 1       |

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

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

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

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

| Analyte   | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD  | RPD Limit |
|-----------|-------------|-------------|----------------|------|---|------|--------------|------|-----------|
| alpha-BHC | 0.500       | 0.460       |                | ug/L |   | 92   | 45 - 115     | 6.11 | 30        |

| Surrogate            | LCSD %Recovery | LCSD 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

| Analyte              | MB Result | MB 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

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------|-------------|------------|---------------|------|---|------|--------------|
| Nitrate as N         | 1.13        | 1.09       |               | 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     |

# QC Sample Results

Client: MWH Americas Inc  
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**

| Analyte              | Sample | Sample    | Spike | MS     | MS        | Unit | D | %Rec | %Rec. | Limits   |
|----------------------|--------|-----------|-------|--------|-----------|------|---|------|-------|----------|
|                      | Result | Qualifier | Added | Result | Qualifier |      |   |      |       |          |
| 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 Batch: 19784**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

| Analyte              | Sample | Sample    | Spike | MSD    | MSD       | Unit | D | %Rec | %Rec. | Limits   | RPD   | RPD |
|----------------------|--------|-----------|-------|--------|-----------|------|---|------|-------|----------|-------|-----|
|                      | Result | Qualifier | Added | Result | Qualifier |      |   |      |       |          | 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**

| Analyte  | MB     | MB        | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------|-----------|------|------|------|---|----------|----------------|---------|
|          | Result | Qualifier |      |      |      |   |          |                |         |
| Chloride | ND     |           | 0.50 | 0.40 | mg/L |   |          | 04/14/12 10:38 | 1       |
| Sulfate  | ND     |           | 0.50 | 0.40 | mg/L |   |          | 04/14/12 10:38 | 1       |

**Lab Sample ID: LCS 440-19785/3**

**Matrix: Water**

**Analysis Batch: 19785**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

| Analyte  | Spike | LCS  | LCS | Unit | D | %Rec | %Rec. | Limits   |
|----------|-------|------|-----|------|---|------|-------|----------|
|          |       |      |     |      |   |      |       |          |
| Chloride | 5.00  | 4.68 |     | mg/L |   | 94   |       | 90 - 110 |
| Sulfate  | 10.0  | 9.37 |     | mg/L |   | 94   |       | 90 - 110 |

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

**Matrix: Water**

**Analysis Batch: 19785**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

| Analyte  | Sample | Sample    | Spike | MS     | MS        | Unit | D | %Rec | %Rec. | Limits   |
|----------|--------|-----------|-------|--------|-----------|------|---|------|-------|----------|
|          | Result | Qualifier | Added | Result | Qualifier |      |   |      |       |          |
| 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**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

| Analyte  | Sample | Sample    | Spike | MSD    | MSD       | Unit | D | %Rec | %Rec. | Limits   | RPD   | RPD |
|----------|--------|-----------|-------|--------|-----------|------|---|------|-------|----------|-------|-----|
|          | Result | Qualifier | Added | Result | Qualifier |      |   |      |       |          | 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  |

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

## Method: 314.0 - Perchlorate (IC)

**Lab Sample ID: MB 440-20654/36**  
**Matrix: Water**  
**Analysis Batch: 20654**

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

| Analyte     | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| Perchlorate | ND        |              | 4.0 | 0.95 | ug/L |   |          | 04/19/12 19:22 | 1       |

**Lab Sample ID: LCS 440-20654/37**  
**Matrix: Water**  
**Analysis Batch: 20654**

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

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

**Lab Sample ID: 440-8689-I-1 MS**  
**Matrix: Water**  
**Analysis Batch: 20654**

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

| Analyte     | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| 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**

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

| Analyte     | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD  | RPD Limit |
|-------------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|------|-----------|
| 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**

| Analyte             | MB Result | MB 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 | J Q          | 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 | J Q          | 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 | J Q          | 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  | 0.00000040  | 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 | J Q          | 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 | J Q          | 0.000050 | 0.00000048  | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |
| Total PeCDF         | 0.0000050 | J Q          | 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 | J Q          | 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 | J Q          | 0.000050 | 0.000000030 | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

**Lab Sample ID: G2D23000077B**

**Matrix: Water**

**Analysis Batch: 2114077**

**Client Sample ID: Method Blank**

**Prep Type: Total**

**Prep Batch: 2114077\_P**

| Analyte             | MB Result | MB Qualifier | ML       | EDL        | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------------------|-----------|--------------|----------|------------|------|---|----------------|----------------|---------|
| Total HxCDF         | 0.000011  | J Q          | 0.000050 | 0.00000030 | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |
| 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       |
| 1,2,3,4,7,8,9-HpCDF | 0.0000041 | J            | 0.000050 | 0.00000018 | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |
| Total HpCDF         | 0.0000094 | J            | 0.000050 | 0.00000017 | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |
| OCDF                | 0.0000070 | J            | 0.00010  | 0.00000031 | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |

| Surrogate          | MB %Recovery | MB Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|--------------------|--------------|--------------|----------|----------------|----------------|---------|
| 37Cl4-2,3,7,8-TCDD | 86           |              | 35 - 197 | 04/23/12 09:00 | 04/24/12 16:35 | 1       |

| Internal Standard       | MB %Recovery | MB 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: G2D23000077C**

**Matrix: Water**

**Analysis Batch: 2114077**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total**

**Prep Batch: 2114077\_P**

| Analyte             | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %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   | B             | ug/L |   | 92   | 70 - 164     |
| 1,2,3,6,7,8-HxCDD   | 0.00100     | 0.000904   | B             | ug/L |   | 90   | 76 - 134     |
| 1,2,3,7,8,9-HxCDD   | 0.00100     | 0.000924   | B             | ug/L |   | 92   | 64 - 162     |
| 1,2,3,4,6,7,8-HpCDD | 0.00100     | 0.000954   | B             | ug/L |   | 95   | 70 - 140     |
| OCDD                | 0.00200     | 0.00188    | B             | 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   | B             | ug/L |   | 94   | 80 - 134     |
| 2,3,4,7,8-PeCDF     | 0.00100     | 0.000869   | B             | ug/L |   | 87   | 68 - 160     |
| 1,2,3,4,7,8-HxCDF   | 0.00100     | 0.000957   | B             | ug/L |   | 96   | 72 - 134     |
| 1,2,3,6,7,8-HxCDF   | 0.00100     | 0.000963   | B             | ug/L |   | 96   | 84 - 130     |
| 2,3,4,6,7,8-HxCDF   | 0.00100     | 0.000955   | B             | ug/L |   | 95   | 70 - 156     |
| 1,2,3,7,8,9-HxCDF   | 0.00100     | 0.00101    | B             | ug/L |   | 101  | 78 - 130     |
| 1,2,3,4,6,7,8-HpCDF | 0.00100     | 0.000948   | B             | ug/L |   | 95   | 82 - 122     |
| 1,2,3,4,7,8,9-HpCDF | 0.00100     | 0.000904   | B             | ug/L |   | 90   | 78 - 138     |
| OCDF                | 0.00200     | 0.00173    | B             | ug/L |   | 87   | 63 - 170     |

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

**Lab Sample ID: G2D23000077C**  
**Matrix: Water**  
**Analysis Batch: 2114077**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total**  
**Prep Batch: 2114077\_P**

| Surrogate          | LCS       |           | Limits   |
|--------------------|-----------|-----------|----------|
|                    | %Recovery | Qualifier |          |
| 37Cl4-2,3,7,8-TCDD | 85        |           | 31 - 191 |

| Internal Standard       | LCS       |           | Limits   |
|-------------------------|-----------|-----------|----------|
|                         | %Recovery | Qualifier |          |
| 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 |
| 13C-1,2,3,4,7,8-HxCDF   | 43        |           | 19 - 202 |

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

**Lab Sample ID: MB 440-21302/1-A**  
**Matrix: Water**  
**Analysis Batch: 21614**

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

| Analyte | MB     |           | RL    | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|-------|-------|------|---|----------------|----------------|---------|
|         | Result | Qualifier |       |       |      |   |                |                |         |
| 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       |

**Lab Sample ID: LCS 440-21302/2-A**  
**Matrix: Water**  
**Analysis Batch: 21614**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 21302**

| Analyte | Spike Added | LCS    |           | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|--------|-----------|------|---|------|--------------|
|         |             | Result | Qualifier |      |   |      |              |
| 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 | MB     |           | RL    | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|-------|-------|------|---|----------------|----------------|---------|
|         | Result | Qualifier |       |       |      |   |                |                |         |
| 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       |

# QC Sample Results

Client: MWH Americas Inc  
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**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Iron    | 0.500       | 0.484      |               | mg/L |   | 97   | 85 - 115     |
| 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**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %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**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | 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**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %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**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | 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**

| Analyte  | MB Result | MB 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       |

# QC Sample Results

Client: MWH Americas Inc  
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

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %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

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %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

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %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

| Analyte  | MB Result | MB 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  
**Prep Type:** Dissolved  
**Prep Batch:** 21301

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %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       |               | ug/L |   | 97   | 85 - 115     |

**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

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Cadmium | ND            |                  | 80.0        | 85.8      |              | ug/L |   | 107  | 70 - 130     |

# QC Sample Results

Client: MWH Americas Inc  
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

| Analyte  | Sample | Sample    | Spike | MS     | MS        | Unit | D | %Rec | %Rec.    | Limits |
|----------|--------|-----------|-------|--------|-----------|------|---|------|----------|--------|
|          | Result | Qualifier | Added | Result | Qualifier |      |   |      |          |        |
| 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

| Analyte  | Sample | Sample    | Spike | MSD    | MSD       | Unit | D | %Rec | %Rec.    | Limits | RPD | Limit |
|----------|--------|-----------|-------|--------|-----------|------|---|------|----------|--------|-----|-------|
|          | Result | Qualifier | Added | Result | Qualifier |      |   |      |          |        |     |       |
| 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

| Analyte | MB     | MB        | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|------|------|------|---|----------------|----------------|---------|
|         | Result | Qualifier |      |      |      |   |                |                |         |
| Mercury | ND     |           | 0.20 | 0.10 | ug/L |   | 04/16/12 15:03 | 04/17/12 12:34 | 1       |

Lab Sample ID: LCS 440-20031/2-A  
Matrix: Water  
Analysis Batch: 20257

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 20031

| Analyte | Spike | LCS  | LCS | Unit | D | %Rec | %Rec.    | Limits |
|---------|-------|------|-----|------|---|------|----------|--------|
|         |       |      |     |      |   |      |          |        |
| Mercury | 8.00  | 8.15 |     | ug/L |   | 102  | 85 - 115 |        |

Lab Sample ID: 440-8609-G-14-B MS  
Matrix: Water  
Analysis Batch: 20257

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 20031

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

Lab Sample ID: 440-8609-G-14-C MSD  
Matrix: Water  
Analysis Batch: 20257

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 20031

| Analyte | Sample | Sample    | Spike | MSD    | MSD       | Unit | D | %Rec | %Rec.    | Limits | RPD | Limit |
|---------|--------|-----------|-------|--------|-----------|------|---|------|----------|--------|-----|-------|
|         | Result | Qualifier | Added | Result | Qualifier |      |   |      |          |        |     |       |
| Mercury | ND     |           | 8.00  | 8.03   |           | ug/L |   | 100  | 70 - 130 | 1.86   | 20  |       |

Lab Sample ID: MB 440-19679/1-C  
Matrix: Water  
Analysis Batch: 20502

Client Sample ID: Method Blank  
Prep Type: Dissolved  
Prep Batch: 20049

| Analyte | MB     | MB        | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|------|------|------|---|----------------|----------------|---------|
|         | Result | Qualifier |      |      |      |   |                |                |         |
| Mercury | ND     |           | 0.20 | 0.10 | ug/L |   | 04/16/12 15:30 | 04/18/12 12:13 | 1       |

# QC Sample Results

Client: MWH Americas Inc  
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  
Matrix: Water  
Analysis Batch: 20502

Client Sample ID: Lab Control Sample  
Prep Type: Dissolved  
Prep Batch: 20049

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

Lab Sample ID: 440-8443-G-1-C MS  
Matrix: Water  
Analysis Batch: 20502

Client Sample ID: Matrix Spike  
Prep Type: Dissolved  
Prep Batch: 20049

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

Lab Sample ID: 440-8443-G-1-D MSD  
Matrix: Water  
Analysis Batch: 20502

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Dissolved  
Prep Batch: 20049

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD  | RPD Limit |
|---------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|------|-----------|
| Mercury | ND            |                  | 8.00        | 8.18       |               | ug/L |   | 102  | 70 - 130     | 1.00 | 20        |

## Method: 120.1 - Conductivity, Specific Conductance

Lab Sample ID: MB 440-19954/1  
Matrix: Water  
Analysis Batch: 19954

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

| Analyte              | MB Result | MB Qualifier | RL  | RL  | Unit     | D | Prepared | Analyzed       | Dil Fac |
|----------------------|-----------|--------------|-----|-----|----------|---|----------|----------------|---------|
| Specific Conductance | ND        |              | 1.0 | 1.0 | umhos/cm |   |          | 04/16/12 10:13 | 1       |

Lab Sample ID: LCS 440-19954/2  
Matrix: Water  
Analysis Batch: 19954

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

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

Lab Sample ID: 440-8522-A-2 DU  
Matrix: Water  
Analysis Batch: 19954

Client Sample ID: Duplicate  
Prep Type: Total/NA

| Analyte              | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit     | D | RPD | RPD Limit |
|----------------------|---------------|------------------|-----------|--------------|----------|---|-----|-----------|
| Specific Conductance | 750           |                  | 755       |              | umhos/cm |   | 0.7 | 5         |

## 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

| Analyte | MB Result | MB Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|-----------|--------------|-----|-----|------|---|----------------|----------------|---------|
| HEM     | ND        |              | 5.0 | 1.4 | mg/L |   | 04/26/12 07:22 | 04/26/12 07:38 | 1       |

# QC Sample Results

Client: MWH Americas Inc  
 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  
 Matrix: Water  
 Analysis Batch: 22042

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 22035

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| HEM     | 20.0        | 18.1       |               | mg/L |   | 91   | 78 - 114     |

Lab Sample ID: LCSD 440-22035/3-A  
 Matrix: Water  
 Analysis Batch: 22042

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 22035

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---------|-------------|-------------|----------------|------|---|------|--------------|-----|-----------|
| HEM     | 20.0        | 18.5        |                | mg/L |   | 93   | 78 - 114     | 2   | 11        |

## Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 440-19825/6  
 Matrix: Water  
 Analysis Batch: 19825

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

| Analyte   | MB Result | MB Qualifier | RL   | MDL   | Unit | D | Prepared | Analyzed       | Dil Fac |
|-----------|-----------|--------------|------|-------|------|---|----------|----------------|---------|
| Turbidity | ND        |              | 0.10 | 0.040 | NTU  |   |          | 04/14/12 17:41 | 1       |

Lab Sample ID: MRL 440-19825/4 MRL  
 Matrix: Water  
 Analysis Batch: 19825

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

| Analyte   | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec. Limits |
|-----------|-------------|------------|---------------|------|---|------|--------------|
| Turbidity | 1.00        | 1.06       |               | NTU  |   | 106  |              |

Lab Sample ID: 440-8689-L-1 DU  
 Matrix: Water  
 Analysis Batch: 19825

Client Sample ID: Duplicate  
 Prep Type: Total/NA

| Analyte   | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|-----------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Turbidity | 390           |                  | 381       |              | NTU  |   | 1   | 20        |

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

Lab Sample ID: MB 440-19957/1  
 Matrix: Water  
 Analysis Batch: 19957

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

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids | ND        |              | 10 | 10  | mg/L |   |          | 04/16/12 10:21 | 1       |

Lab Sample ID: LCS 440-19957/2  
 Matrix: Water  
 Analysis Batch: 19957

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

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Dissolved Solids | 1000        | 934        |               | mg/L |   | 93   | 90 - 110     |

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

## 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

| Analyte                | Sample | Sample    | DU     | DU        | Unit | D | RPD  | Limit |
|------------------------|--------|-----------|--------|-----------|------|---|------|-------|
|                        | Result | Qualifier | Result | Qualifier |      |   |      |       |
| Total Dissolved Solids | 2600   |           | 2710   |           | mg/L |   | 3.00 | 10    |

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

Lab Sample ID: MB 440-21096/1  
Matrix: Water  
Analysis Batch: 21096

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

| Analyte                | MB     | MB        | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------|-----------|----|-----|------|---|----------|----------------|---------|
|                        | Result | Qualifier |    |     |      |   |          |                |         |
| Total Suspended Solids | ND     |           | 10 | 10  | mg/L |   |          | 04/20/12 19:12 | 1       |

Lab Sample ID: LCS 440-21096/2  
Matrix: Water  
Analysis Batch: 21096

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

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

Lab Sample ID: 440-8678-A-1 DU  
Matrix: Water  
Analysis Batch: 21096

Client Sample ID: Duplicate  
Prep Type: Total/NA

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

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

Lab Sample ID: MB 440-22248/1-A  
Matrix: Water  
Analysis Batch: 22273

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 22248

| Analyte        | MB     | MB        | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
|                | Result | Qualifier |     |     |      |   |                |                |         |
| 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  
Matrix: Water  
Analysis Batch: 22273

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 22248

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

Lab Sample ID: 440-9403-A-1-A MS  
Matrix: Water  
Analysis Batch: 22273

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 22248

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

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

Lab Sample ID: 440-9403-A-1-C MSD  
Matrix: Water  
Analysis Batch: 22273

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 22248

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

## Method: SM 4500 NH3 C - Ammonia

Lab Sample ID: MB 440-22259/1-A  
Matrix: Water  
Analysis Batch: 22271

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 22259

| Analyte        | MB Result | MB Qualifier | RL    | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------------|-----------|--------------|-------|-------|------|---|----------------|----------------|---------|
| Ammonia (as N) | ND        |              | 0.400 | 0.157 | mg/L |   | 04/26/12 19:26 | 04/26/12 21:20 | 1       |

Lab Sample ID: LCS 440-22259/2-A  
Matrix: Water  
Analysis Batch: 22271

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 22259

| Analyte        | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------|-------------|------------|---------------|------|---|------|--------------|
| Ammonia (as N) | 10.0        | 9.800      |               | mg/L |   | 98   | 85 - 115     |

Lab Sample ID: 440-8694-1 MS  
Matrix: Water  
Analysis Batch: 22271

Client Sample ID: Outfall 002 Composite  
Prep Type: Total/NA  
Prep Batch: 22259

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

Lab Sample ID: 440-8694-1 MSD  
Matrix: Water  
Analysis Batch: 22271

Client Sample ID: Outfall 002 Composite  
Prep Type: Total/NA  
Prep Batch: 22259

| Analyte        | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | Limit |
|----------------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-------|
| Ammonia (as N) | 0.280         | J,DX             | 10.0        | 10.08      |               | mg/L |   | 98   | 70 - 120     | 6   | 15    |

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

Lab Sample ID: MB 440-19842/3  
Matrix: Water  
Analysis Batch: 19842

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

| Analyte                          | MB Result | MB Qualifier | RL   | MDL   | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------------------|-----------|--------------|------|-------|------|---|----------|----------------|---------|
| Methylene Blue Active Substances | ND        |              | 0.10 | 0.050 | mg/L |   |          | 04/14/12 21:15 | 1       |

Lab Sample ID: LCS 440-19842/4  
Matrix: Water  
Analysis Batch: 19842

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

| Analyte                          | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------------------|-------------|------------|---------------|------|---|------|--------------|
| Methylene Blue Active Substances | 0.250       | 0.272      |               | mg/L |   | 109  | 90 - 110     |

# QC Sample Results

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**

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

**Lab Sample ID: 440-8672-A-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 19842**

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

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

## Method: SM5210B - BOD, 5 Day

**Lab Sample ID: USB 440-19862/1 USB**  
**Matrix: Water**  
**Analysis Batch: 19862**

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

| Analyte                   | USB Result | USB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|------------|---------------|-----|------|------|---|----------|----------------|---------|
| Biochemical Oxygen Demand | ND         |               | 2.0 | 0.50 | mg/L |   |          | 04/15/12 12:00 | 1       |

**Lab Sample ID: LCS 440-19862/4**  
**Matrix: Water**  
**Analysis Batch: 19862**

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

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

**Lab Sample ID: LCSD 440-19862/5**  
**Matrix: Water**  
**Analysis Batch: 19862**

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

| Analyte                   | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD  | RPD Limit |
|---------------------------|-------------|-------------|----------------|------|---|------|--------------|------|-----------|
| Biochemical Oxygen Demand | 199         | 214         |                | mg/L |   | 108  | 85 - 115     | 1.89 | 20        |

## Method: Gross Alpha and Beta - Gross Alpha/Beta

**Lab Sample ID: S204070-04**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte | Blank Result | Blank 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**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte      | Blank Result | Blank 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       |

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

**Lab Sample ID: S204070-04**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte      | Blank Result | Blank 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**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte        | Blank Result | Blank 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**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte     | Blank Result | Blank 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**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte    | Blank Result | Blank 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**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte    | Blank Result | Blank 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       |

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

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

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte    | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|------------|-------------|------------|---------------|-------|---|------|--------------|
| Cesium-137 | 147         | 149        |               | pCi/L |   | 101  | 80 - 120     |
| Cobalt-60  | 130         | 126        |               | pCi/L |   | 97   | 80 - 120     |

# QC Sample Results

Client: MWH Americas Inc  
Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte      | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|--------------|-------------|------------|---------------|-------|---|------|--------------|
| Strontium-90 | 9.34        | 7.84       |               | pCi/L |   | 84   | 80 - 120     |

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte        | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|----------------|-------------|------------|---------------|-------|---|------|--------------|
| Uranium, Total | 56.5        | 64.2       |               | pCi/L |   | 114  | 80 - 120     |

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte    | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|------------|-------------|------------|---------------|-------|---|------|--------------|
| Radium-228 | 4.41        | 4.73       |               | pCi/L |   | 107  | 60 - 140     |

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte     | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|-------------|-------------|------------|---------------|-------|---|------|--------------|
| Gross Alpha | 37          | 40.4       |               | pCi/L |   | 109  | 70 - 130     |
| Gross Beta  | 34          | 32.6       |               | pCi/L |   | 96   | 70 - 130     |

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte    | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|------------|-------------|------------|---------------|-------|---|------|--------------|
| Radium-226 | 50.1        | 48.5       |               | pCi/L |   | 97   | 80 - 120     |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: OUTFALL 002 (440-8694-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte | Sample Result | Sample Qualifier | Duplicate Result | Duplicate Qualifier | Unit  | D | RPD | Limit |
|---------|---------------|------------------|------------------|---------------------|-------|---|-----|-------|
| Tritium | 19.4          | U                | 18.5             | U                   | pCi/L |   | 0   |       |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: OUTFALL 002 (440-8694-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte      | Sample Result | Sample Qualifier | Duplicate Result | Duplicate Qualifier | Unit  | D | RPD | Limit |
|--------------|---------------|------------------|------------------|---------------------|-------|---|-----|-------|
| Strontium-90 | -0.131        | U                | 0.038            | U                   | pCi/L |   | 0   |       |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: OUTFALL 002 (440-8694-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte    | Sample Result | Sample Qualifier | Duplicate Result | Duplicate Qualifier | Unit  | D | RPD | Limit |
|------------|---------------|------------------|------------------|---------------------|-------|---|-----|-------|
| Cesium-137 | 0.152         | U                | -0.761           | U                   | pCi/L |   | 0   |       |

# QC Sample Results

Client: MWH Americas Inc  
 Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

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

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: OUTFALL 002 (440-8694-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

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

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: OUTFALL 002 (440-8694-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte        | Sample | Sample    | Duplicate | Duplicate | Unit  | D | RPD | Limit |
|----------------|--------|-----------|-----------|-----------|-------|---|-----|-------|
|                | Result | Qualifier | Result    | Qualifier |       |   |     |       |
| Uranium, Total | 0.172  | J         | 0.183     | J         | pCi/L |   | 6   |       |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: OUTFALL 002 (440-8694-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte    | Sample | Sample    | Duplicate | Duplicate | Unit  | D | RPD | Limit |
|------------|--------|-----------|-----------|-----------|-------|---|-----|-------|
|            | Result | Qualifier | Result    | Qualifier |       |   |     |       |
| Radium-228 | 0.295  | U         | 0.333     | U         | pCi/L |   | 0   |       |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: OUTFALL 002 (440-8694-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

| Analyte     | Sample | Sample    | Duplicate | Duplicate | Unit  | D | RPD | Limit |
|-------------|--------|-----------|-----------|-----------|-------|---|-----|-------|
|             | Result | Qualifier | Result    | Qualifier |       |   |     |       |
| Gross Alpha | 1.34   | J         | 2.68      | J         | pCi/L |   | 67  |       |
| Gross Beta  | 4.81   |           | 5.29      |           | pCi/L |   | 10  |       |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8612**

**Client Sample ID: OUTFALL 002 (440-8694-1) DU**  
**Prep Type: Total/NA**  
**Prep Batch: 8612\_P**

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

# QC Association Summary

Client: MWH Americas Inc  
 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 Type | Matrix | Method | 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 Duplicate | Total/NA  | Water  | 624    |            |
| LCS 440-20297/5  | Lab Control Sample     | Total/NA  | Water  | 624    |            |
| MB 440-20297/4   | Method Blank           | Total/NA  | Water  | 624    |            |

### Analysis Batch: 20367

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

# QC Association Summary

Client: MWH Americas Inc  
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  |            |

# 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)

| 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  |            |
| 440-8694-1         | 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  |            |

# QC Association Summary

Client: MWH Americas Inc  
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

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

# QC Association Summary

Client: MWH Americas Inc  
 Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

## 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 |            |
| LCS 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  |            |
| LCS 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      |
| LCS 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 |            |



# 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     |
| 440-8694-1    | Outfall 002 Composite | Total/NA  | Water  | K-40 CS-137          | 8612_P     |
| 440-8694-1    | Outfall 002 Composite | Total/NA  | Water  | Gross Alpha and Beta | 8612_P     |
| 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, Combined    | 8612_P     |
| 440-8694-2    | Trip Blank            | Total/NA  | Water  | Gamma Spec           | 8612_P     |
| 440-8694-2    | Trip Blank            | Total/NA  | Water  | K-40 CS-137          | 8612_P     |
| 440-8694-2    | Trip Blank            | Total/NA  | Water  | Gross Alpha and Beta | 8612_P     |
| 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  | Tritium              | 8612_P     |
| 440-8694-2    | Trip Blank            | Total/NA  | Water  | Uranium, Combined    | 8612_P     |
| S204070-03    | Lab Control Sample    | Total/NA  | WATER  | Gross Alpha and Beta | 8612_P     |

# 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 and Beta | 8612_P     |
| S204070-05    | OUTFALL 002 (440-8694-1) DU | Total/NA  | WATER  | Gross Alpha and Beta | 8612_P     |

### 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 |            |



# 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).   |
| B         | Method blank contamination. The associated method blank contains the target analyte at a reportable level. |

### Metals

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

### General Chemistry

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

### Subcontract

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

## Glossary

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

# Certification Summary

Client: MWH Americas Inc  
 Project/Site: Routine Outfall 002 Grab

TestAmerica Job ID: 440-8624-1

| Laboratory                  | Authority                | Program                     | EPA Region | Certification ID  |
|-----------------------------|--------------------------|-----------------------------|------------|-------------------|
| TestAmerica Irvine          | Arizona                  | State Program               | 9          | AZ0671            |
| TestAmerica Irvine          | California               | LA Cty Sanitation Districts | 9          | 10256             |
| TestAmerica Irvine          | California               | NELAC                       | 9          | 1108CA            |
| TestAmerica Irvine          | California               | State Program               | 9          | 2706              |
| TestAmerica Irvine          | Guam                     | State Program               | 9          | Cert. No. 12.002r |
| TestAmerica Irvine          | Hawaii                   | State Program               | 9          | N/A               |
| TestAmerica Irvine          | Nevada                   | State Program               | 9          | CA015312007A      |
| TestAmerica Irvine          | New Mexico               | State Program               | 6          | N/A               |
| TestAmerica Irvine          | Northern Mariana Islands | State Program               | 9          | MP0002            |
| TestAmerica Irvine          | Oregon                   | NELAC                       | 10         | 4005              |
| TestAmerica Irvine          | USDA                     | Federal                     |            | P330-09-00080     |
| TestAmerica West Sacramento | A2LA                     | DoD ELAP                    |            | 2928-01           |
| TestAmerica West Sacramento | Alaska (UST)             | State Program               | 10         | UST-055           |
| TestAmerica West Sacramento | Arizona                  | State Program               | 9          | AZ0708            |
| TestAmerica West Sacramento | Arkansas DEQ             | State Program               | 6          | 88-0691           |
| TestAmerica West Sacramento | California               | NELAC                       | 9          | 1119CA            |
| TestAmerica West Sacramento | 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.



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  $2\sigma$  error (Total):

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

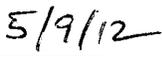
#### 4.0 Analysis Notes

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

#### 5.0 Case Narrative Certification Statement

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

  
\_\_\_\_\_  
**Joseph Verville**  
**Client Services Manager**

  
\_\_\_\_\_  
**Date**

EBERLINE ANALYTICAL  
SDG 8612

SDG 8612  
Contact Joseph Verville

Client Test America, Inc.  
Contract 44002624

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

| T A B L E   O F   C O N T E N T S |   |   |   |    |
|-----------------------------------|---|---|---|----|
| About this section                | . | . | . | 1  |
| Sample Summaries                  | . | . | . | 3  |
| Prep Batch Summary                | . | . | . | 5  |
| Work Summary                      | . | . | . | 6  |
| Method Blanks                     | . | . | . | 8  |
| Lab Control Samples               | . | . | . | 9  |
| Duplicates                        | . | . | . | 10 |
| Data Sheets                       | . | . | . | 11 |
| Method Summaries                  | . | . | . | 13 |
| Report Guides                     | . | . | . | 21 |
| End of Section                    | . | . | . | 35 |

  
Prepared by

  
Reviewed by

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

EBERLINE ANALYTICAL

SDG 8612

SDG 8612  
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

DUPLICATES

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 1

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

EBERLINE ANALYTICAL

SDG 8612

SDG 8612  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

ABOUT THE DATA SUMMARY SECTION

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

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

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 Contact Joseph Verville

LAB SAMPLE SUMMARY

Client Test America, Inc.  
 Contract 44002624

| LAB        |                          |             |        |       |        |            | CHAIN OF       |  |
|------------|--------------------------|-------------|--------|-------|--------|------------|----------------|--|
| SAMPLE ID  | CLIENT SAMPLE ID         | LOCATION    | MATRIX | LEVEL | SAS NO | CUSTODY    | COLLECTED      |  |
| S204070-01 | OUTFALL 002 (440-8694-1) | Boeing-SSFL | WATER  |       |        | 440-4025.1 | 04/13/12 17:54 |  |
| S204070-02 | 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 |  |

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- 13

LAB SUMMARY

Page 1

SUMMARY DATA SECTION

Page 3

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

EBERLINE ANALYTICAL

SDG 8612

QC SUMMARY

SDG 8612  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

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

- 1
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Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-QS  
 Version 3.06  
 Report date 05/09/12

EBERLINE ANALYTICAL

SDG 8612

SDG 8612  
Contact Joseph Verville

PREP BATCH SUMMARY

Client Test America, Inc.  
Contract 44002624

| TEST                          | MATRIX | METHOD                  | PREPARATION ERROR |      | PLANCHETS ANALYZED |      |          |     | QUALI-<br>FIERS |
|-------------------------------|--------|-------------------------|-------------------|------|--------------------|------|----------|-----|-----------------|
|                               |        |                         | BATCH             | 2σ % | CLIENT             | MORE | RE BLANK | LCS |                 |
| 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 Proportional 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 Spectroscopy            |        |                         |                   |      |                    |      |          |     |                 |
| GAM                           | WATER  | Gamma Emitters in Water | 7271-144          | 7.0  | 2                  |      | 1        | 1   | 1/1             |
| Kinetic Phosphorimetry        |        |                         |                   |      |                    |      |          |     |                 |
| U_T                           | WATER  | Uranium, Total          | 7271-144          |      | 2                  |      | 1        | 1   | 1/1             |
| Liquid Scintillation Counting |        |                         |                   |      |                    |      |          |     |                 |
| H                             | WATER  | Tritium in Water        | 7271-144          | 10.0 | 1                  |      | 1        | 1   | 1/1             |
| Radon 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.

PREP BATCH SUMMARY

Page 1

SUMMARY DATA SECTION

Page 5

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

EBERLINE ANALYTICAL

SDG 8612

SDG 8612  
Contact Joseph Verville

LAB WORK SUMMARY

Client Test America, Inc.  
Contract 44002624

| LAB SAMPLE | CLIENT SAMPLE ID         |        |          |        |     |          |          |     |                         |  |
|------------|--------------------------|--------|----------|--------|-----|----------|----------|-----|-------------------------|--|
| COLLECTED  | LOCATION                 | MATRIX | SUF-     |        |     |          |          |     |                         |  |
| RECEIVED   | CUSTODY                  | SAS no | PLANCHET | TEST   | FIX | ANALYZED | REVIEWED | BY  | METHOD                  |  |
| S204070-01 | OUTFALL 002 (440-8694-1) |        | 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 | H      |     | 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 | 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 | 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 | H      |     | 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

Page 1

SUMMARY DATA SECTION

Page 6

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

EBERLINE ANALYTICAL

SDG 8612

SDG 8612  
Contact Joseph Verville

Client Test America, Inc.  
Contract 44002624

WORK SUMMARY, cont.

| LAB SAMPLE | CLIENT SAMPLE ID       |        |          |        |      |          |          |     |                         |  |
|------------|------------------------|--------|----------|--------|------|----------|----------|-----|-------------------------|--|
| COLLECTED  | LOCATION               | MATRIX | PLANCHET | TEST   | SUF- | ANALYZED | REVIEWED | BY  | METHOD                  |  |
| RECEIVED   | CUSTODY                | SAS no |          |        | FIX  |          |          |     |                         |  |
| 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 | H      |      | 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          |  |

| COUNTS OF TESTS BY SAMPLE TYPE |        |                         |           |        |      |    |       |     |     |       |       |
|--------------------------------|--------|-------------------------|-----------|--------|------|----|-------|-----|-----|-------|-------|
| TEST                           | SAS no | METHOD                  | REFERENCE | CLIENT | MORE | RE | BLANK | LCS | DUP | SPIKE | TOTAL |
| 80A/80                         |        | Gross Alpha in Water    | 900.0     | 2      |      |    | 1     | 1   | 1   |       | 5     |
| 80B/80                         |        | Gross Beta in Water     | 900.0     | 2      |      |    | 1     | 1   | 1   |       | 5     |
| AC                             |        | Radium-228 in Water     | 904.0     | 2      |      |    | 1     | 1   | 1   |       | 5     |
| GAM                            |        | Gamma Emitters in Water | 901.1     | 2      |      |    | 1     | 1   | 1   |       | 5     |
| H                              |        | Tritium in Water        | 906.0     | 1      |      |    | 1     | 1   | 1   |       | 4     |
| RA                             |        | Radium-226 in Water     | 903.1     | 2      |      |    | 1     | 1   | 1   |       | 5     |
| SR                             |        | Strontium-90 in Water   | 905.0     | 2      |      |    | 1     | 1   | 1   |       | 5     |
| U_T                            |        | Uranium, Total          | D5174     | 2      |      |    | 1     | 1   | 1   |       | 5     |
| TOTALS                         |        |                         |           | 15     |      |    | 8     | 8   | 8   |       | 39    |

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

EBERLINE ANALYTICAL

SDG 8612

8612-004

Method Blank

METHOD BLANK

|                                 |                                      |
|---------------------------------|--------------------------------------|
| SDG <u>8612</u>                 | Client <u>Test America, Inc.</u>     |
| Contact <u>Joseph Verville</u>  | Contract <u>44002624</u>             |
| Lab sample id <u>S204070-04</u> | Client sample id <u>Method Blank</u> |
| Dept sample id <u>8612-004</u>  | Material/Matrix <u>WATER</u>         |

| ANALYTE        | CAS NO   | RESULT<br>pCi/L | 2σ ERR<br>(COUNT) | MDA<br>pCi/L | RDL<br>pCi/L | QUALI-<br>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               | U_T  |
| Potassium-40   | 13966002 | 1.73            | 18                | <u>32.1</u>  | 25.0         | U               | GAM  |
| Cesium-137     | 10045973 | -0.940          | 1.7               | 3.07         | 20.0         | U               | GAM  |

QC-BLANK #81586

|             |                 |
|-------------|-----------------|
| Lab id      | <u>EAS</u>      |
| Protocol    | <u>TA</u>       |
| Version     | <u>Ver 1.0</u>  |
| Form        | <u>DVD-DS</u>   |
| Version     | <u>3.06</u>     |
| Report date | <u>05/09/12</u> |

EBERLINE ANALYTICAL

SDG 8612

8612-003

Lab Control Sample

LAB CONTROL SAMPLE

|                                 |  |
|---------------------------------|--|
| SDG <u>8612</u>                 | Client <u>Test America, Inc.</u>           |
| Contact <u>Joseph Verville</u>  | Contract <u>44002624</u>                   |
| Lab sample id <u>S204070-03</u> | Client sample id <u>Lab Control Sample</u> |
| Dept sample id <u>8612-003</u>  | Material/Matrix <u>WATER</u>               |

| ANALYTE        | RESULT<br>pCi/L | 2σ ERR<br>(COUNT) | MDA<br>pCi/L | RDL<br>pCi/L | QUALI-<br>FIERS TEST | ADDED<br>pCi/L | 2σ ERR<br>pCi/L | REC<br>% | 2σ LMITS<br>(TOTAL) | PROTOCOL<br>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          | H                    | 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

Page 1

SUMMARY DATA SECTION

Page 9

|                             |
|-----------------------------|
| Lab id <u>EAS</u>           |
| Protocol <u>TA</u>          |
| Version <u>Ver 1.0</u>      |
| Form <u>DVD-LCS</u>         |
| Version <u>3.06</u>         |
| Report date <u>05/09/12</u> |

EBERLINE ANALYTICAL

SDG 8612

8612-005

OUTFALL 002 (440-8694-1)

DUPLICATE

|                                 |                                  |  |
|---------------------------------|----------------------------------|--|
| SDG <u>8612</u>                 | Client <u>Test America, Inc.</u> |  |
| Contact <u>Joseph Verville</u>  | Contract <u>44002624</u>         |  |
| DUPLICATE                       | ORIGINAL                         |  |
| Lab sample id <u>S204070-05</u> | Lab sample id <u>S204070-01</u>  | Client sample id <u>OUTFALL 002 (440-8694-1)</u>     |
| Dept sample id <u>8612-005</u>  | Dept sample id <u>8612-001</u>   | Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>      |
|                                 | Received <u>04/17/12</u>         | Collected/Volume <u>04/13/12 17:54</u> <u>10.0 L</u> |
|                                 |                                  | Chain of custody id <u>440-4025.1</u>                |

| ANALYTE        | DUPLICATE<br>pCi/L | 2σ ERR<br>(COUNT) | MDA<br>pCi/L | RDL<br>pCi/L | QUALI-<br>FIERS | TEST | ORIGINAL<br>pCi/L | 2σ ERR<br>(COUNT) | MDA<br>pCi/L | QUALI-<br>FIERS | RPD<br>% | 3σ<br>TOT | DER<br>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          | U               | H    | 19.4              | 88                | 148          | U               | -        | -         | 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                | <u>34.2</u>  | 25.0         | U               | GAM  | -4.54             | 15                | <u>26.9</u>  | U               | -        | -         | 0.7      |
| Cesium-137     | -0.761             | 1.8               | 3.22         | 20.0         | U               | GAM  | 0.152             | 1.3               | 1.58         | U               | -        | -         | 0.8      |

QC-DUP#1 81587

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

**EBERLINE ANALYTICAL**

SDG 8612

8612-001

OUTFALL 002 (440-8694-1)

**DATA SHEET**

|                                 |  |
|---------------------------------|--|
| SDG <u>8612</u>                 | Client <u>Test America, Inc.</u>                     |
| Contact <u>Joseph Verville</u>  | Contract <u>44002624</u>                             |
| Lab sample id <u>S204070-01</u> | Client sample id <u>OUTFALL 002 (440-8694-1)</u>     |
| Dept sample id <u>8612-001</u>  | Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>      |
| Received <u>04/17/12</u>        | Collected/Volume <u>04/13/12 17:54</u> <u>10.0 L</u> |
|                                 | Chain of custody id <u>440-4025.1</u>                |

| ANALYTE        | CAS NO   | RESULT<br>pCi/L | 2σ ERR<br>(COUNT) | MDA<br>pCi/L | RDL<br>pCi/L | QUALI-<br>FIERS | TEST |
|----------------|----------|-----------------|-------------------|--------------|--------------|-----------------|------|
| Gross Alpha    | 12587461 | 1.34            | 0.81              | 1.26         | 3.00         | J               | 80A  |
| Gross Beta     | 12587472 | 4.81            | 0.97              | 1.44         | 4.00         |                 | 80B  |
| Tritium        | 10028178 | 19.4            | 88                | 148          | 500          | U               | H    |
| 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               | U_T  |
| Potassium-40   | 13966002 | -4.54           | 15                | <u>26.9</u>  | 25.0         | U               | GAM  |
| Cesium-137     | 10045973 | 0.152           | 1.3               | 1.58         | 20.0         | U               | GAM  |

**DATA SHEETS**  
Page 1  
**SUMMARY DATA SECTION**  
Page 11

|                             |
|-----------------------------|
| Lab id <u>EAS</u>           |
| Protocol <u>TA</u>          |
| Version <u>Ver 1.0</u>      |
| Form <u>DVD-DS</u>          |
| Version <u>3.06</u>         |
| Report date <u>05/09/12</u> |

EBERLINE ANALYTICAL

SDG 8612

8612-002

TRIP-BLANK (440-8694-2)

DATA SHEET

|                                 |  |
|---------------------------------|--|
| SDG <u>8612</u>                 | Client <u>Test America, Inc.</u>                     |
| Contact <u>Joseph Verville</u>  | Contract <u>44002624</u>                             |
| Lab sample id <u>S204070-02</u> | Client sample id <u>TRIP-BLANK (440-8694-2)</u>      |
| Dept sample id <u>8612-002</u>  | Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>      |
| Received <u>04/17/12</u>        | Collected/Volume <u>04/13/12 17:54</u> <u>10.0 L</u> |
|                                 | Chain of custody id <u>440-4025.1</u>                |

| ANALYTE        | CAS NO   | RESULT<br>pCi/L | 2σ ERR<br>(COUNT) | MDA<br>pCi/L | RDL<br>pCi/L | QUALI-<br>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         | U               | U_T  |
| Potassium-40   | 13966002 | 1.16            | 20                | <u>35.5</u>  | 25.0         | U               | GAM  |
| Cesium-137     | 10045973 | 0.520           | 1.0               | 2.01         | 20.0         | U               | GAM  |

DATA SHEETS  
Page 2  
SUMMARY DATA SECTION  
Page 12

|                             |
|-----------------------------|
| Lab id <u>EAS</u>           |
| Protocol <u>TA</u>          |
| Version <u>Ver 1.0</u>      |
| Form <u>DVD-DS</u>          |
| Version <u>3.06</u>         |
| Report date <u>05/09/12</u> |

EBERLINE ANALYTICAL

SDG 8612

Client Test America, Inc.  
Contract 44002624

Test AC Matrix WATER  
SDG 8612  
Contact Joseph Verville

LAB METHOD SUMMARY

RADIUM-228 IN WATER  
BETA COUNTING

RESULTS

LAB RAW SUP-  
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)  | U   |
| S204070-03 | 8612-003 | Lab Control Sample       | ok  |
| S204070-04 | 8612-004 | Method Blank             | U   |
| S204070-05 | 8612-005 | Duplicate (S204070-01)   | - U |

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

METHOD PERFORMANCE

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

Preparation batch 7271-144 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.012

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

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

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

METHOD SUMMARIES  
Page 1  
SUMMARY DATA SECTION  
Page 13

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

EBERLINE ANALYTICAL

SDG 8612

Client Test America, Inc.  
Contract 44002624

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR Matrix WATER  
SDG 8612  
Contact Joseph Verville

RESULTS

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

Preparation batch 7271-144

|            |          |                          |     |
|------------|----------|--------------------------|-----|
| 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 |

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

METHOD PERFORMANCE

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

Preparation batch 7271-144 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.012

|            |                          |       |              |    |     |    |          |       |         |
|------------|--------------------------|-------|--------------|----|-----|----|----------|-------|---------|
| S204070-01 | OUTFALL 002 (440-8694-1) | 0.835 | <u>0.500</u> | 95 | 50  | 13 | 04/26/12 | 04/26 | GRB-221 |
| S204070-02 | TRIP-BLANK (440-8694-2)  | 0.814 | <u>0.500</u> | 95 | 50  | 13 | 04/26/12 | 04/26 | GRB-222 |
| S204070-03 | Lab Control Sample       | 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 (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

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

METHOD SUMMARIES

Page 2

SUMMARY DATA SECTION

Page 14

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

**EBERLINE ANALYTICAL**

SDG 8612

**LAB METHOD SUMMARY**

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Test 80A Matrix WATER  
 SDG 8612  
 Contact Joseph Verville

Client Test America, Inc.  
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**RESULTS**

| LAB                        | RAW  | SUF- |          |                          |             |
|----------------------------|------|------|----------|--------------------------|-------------|
| SAMPLE ID                  | TEST | FIX  | PLANCHET | CLIENT SAMPLE ID         | Gross Alpha |
| Preparation batch 7271-144 |      |      |          |                          |             |
| S204070-01                 | 80   |      | 8612-001 | OUTFALL 002 (440-8694-1) | 1.34 J      |
| 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 J        |

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

**METHOD PERFORMANCE**

| LAB  | RAW  | SUF- | MDA                      | ALIQ  | PREP         | DILU- | RESID | EFF | COUNT | FWHM | DRIFT | DAYS | ANAL-    |          |      |          |
|--|------|------|--------------------------|-------|--------------|-------|-------|-----|-------|------|-------|------|----------|----------|------|----------|
| SAMPLE ID  | TEST | FIX  | CLIENT SAMPLE ID         | pCi/L | L            | FAC   | TION  | mg  | %     | min  | keV   | KeV  | HELD     | PREPARED | YZED | DETECTOR |
| Preparation batch 7271-144      2σ prep error 20.6 %      Reference Lab Notebook No. 7271 pg.012 |      |      |                          |       |              |       |       |     |       |      |       |      |          |          |      |          |
| S204070-01   | 80   |      | OUTFALL 002 (440-8694-1) | 1.26  | <u>0.220</u> |       |       | 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 | <u>0.220</u> |       |       | 93  |       | 400  |       | 17   | 04/26/12 | 04/30    |      | GRB-109  |

Nominal values and limits from method      3.00      0.300      0-250      100      180

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

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

METHOD SUMMARIES  
 Page 3  
 SUMMARY DATA SECTION  
 Page 15

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

**EBERLINE ANALYTICAL**

SDG 8612

Test 80B Matrix WATER  
 SDG 8612  
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**LAB METHOD SUMMARY**

GROSS BETA IN WATER  
 GAS PROPORTIONAL COUNTING

**RESULTS**

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

Preparation batch 7271-144

|            |    |          |                          |      |
|------------|----|----------|--------------------------|------|
| 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 | ANAL-    |      |          |
|-----------|----------|------------------|-------|------|------|-------|-------|-----|-------|------|-------|------|----------|------|----------|
| SAMPLE ID | TEST FIX | CLIENT SAMPLE ID | pCi/L | L    | FAC  | TION  | mg    | %   | min   | keV  | KeV   | HELD | PREPARED | YZED | DETECTOR |

Preparation batch 7271-144      2σ prep error 11.0 %      Reference Lab Notebook No. 7271 pg.012

|            |    |                          |       |              |  |  |    |     |  |  |    |          |       |         |
|------------|----|--------------------------|-------|--------------|--|--|----|-----|--|--|----|----------|-------|---------|
| S204070-01 | 80 | OUTFALL 002 (440-8694-1) | 1.44  | <u>0.220</u> |  |  | 92 | 400 |  |  | 18 | 04/26/12 | 05/01 | GRB-214 |
| 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  | <u>0.220</u> |  |  | 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

METHOD SUMMARIES

Page 4

SUMMARY DATA SECTION

Page 16

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

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SDG 8612

Test GAM Matrix WATER

SDG 8612

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LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

RESULTS

LAB RAW SUF-  
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Cobalt-60 Cesium-137

Preparation batch 7271-144

|            |          |                          |    |     |
|------------|----------|--------------------------|----|-----|
| 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 values and limits from method RDLs (pCi/L) 10.0 20.0

METHOD PERFORMANCE

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

Preparation batch 7271-144 2σ prep error 7.0 % Reference Lab Notebook No. 7271 pg.012

|            |  |                          |      |  |  |  |  |  |  |  |  |    |          |       |         |
|------------|--|--------------------------|------|--|--|--|--|--|--|--|--|----|----------|-------|---------|
| S204070-01 |  | OUTFALL 002 (440-8694-1) | 2.00 |  |  |  |  |  |  |  |  | 13 | 04/26/12 | 04/26 | MB,G8,0 |
| S204070-02 |  | TRIP-BLANK (440-8694-2)  | 2.00 |  |  |  |  |  |  |  |  | 13 | 04/26/12 | 04/26 | MB,G1,0 |
| S204070-03 |  | Lab Control Sample       | 2.00 |  |  |  |  |  |  |  |  |    | 04/26/12 | 04/26 | MB,G6,0 |
| S204070-04 |  | Method Blank             | 2.00 |  |  |  |  |  |  |  |  |    | 04/26/12 | 04/27 | MB,G3,0 |
| S204070-05 |  | Duplicate (S204070-01)   | 2.00 |  |  |  |  |  |  |  |  | 14 | 04/26/12 | 04/27 | MB,G4,0 |

Nominal values and limits from method 6.00 2.00 400 180

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

METHOD SUMMARIES

Page 5

SUMMARY DATA SECTION

Page 17

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

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SDG 8612

Test U T Matrix WATER

SDG 8612

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Contract 44002624

LAB METHOD SUMMARY

URANIUM, TOTAL  
KINETIC PHOSPHORIMETRY

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)  | U       |
| S204070-03                 |          | 8612-003 | Lab Control Sample       | ok      |
| S204070-04                 |          | 8612-004 | Method Blank             | U       |
| S204070-05                 |          | 8612-005 | Duplicate (S204070-01)   | ok J    |

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

METHOD PERFORMANCE

| LAB                        | RAW      | SUF-                     | MDA   | ALIQ                                   | PREP | DILU- | YIELD | EFF | COUNT | FWHM | DRIFT | DAYS | ANAL-    |       |          |
|----------------------------|----------|--------------------------|-------|--|------|-------|-------|-----|-------|------|-------|------|----------|-------|----------|
| SAMPLE ID                  | TEST FIX | CLIENT SAMPLE ID         | pCi/L | L                                      | FAC  | TION  | %     | %   | min   | keV  | KeV   | HELD | PREPARED | YZED  | DETECTOR |
| Preparation batch 7271-144 |          | 2σ prep error            |       | Reference Lab Notebook No. 7271 pg.012 |      |       |       |     |       |      |       |      |          |       |          |
| 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 values and limits from method 1.00 0.0200 180

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD MDA 0.051 ± 0.146  
FOR 5 SAMPLES YIELD \_\_\_\_\_ ± \_\_\_\_\_

METHOD SUMMARIES

Page 6

SUMMARY DATA SECTION

Page 18

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

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SDG 8612

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Test H Matrix WATER  
SDG 8612  
Contact Joseph Verville

**LAB METHOD SUMMARY**

TRITIUM IN WATER  
LIQUID SCINTILLATION COUNTING

**RESULTS**

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

Preparation batch 7271-144

|            |          |                          |     |
|------------|----------|--------------------------|-----|
| 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 |

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

**METHOD PERFORMANCE**

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

Preparation batch 7271-144 2σ prep error 10.0 % Reference Lab Notebook No. 7271 pg.012

|            |                          |     |        |     |     |   |          |       |         |
|------------|--------------------------|-----|--------|-----|-----|---|----------|-------|---------|
| S204070-01 | OUTFALL 002 (440-8694-1) | 148 | 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 |
| S204070-05 | Duplicate (S204070-01)   | 152 | 0.0100 | 100 | 150 | 6 | 04/19/12 | 04/19 | LSC-007 |

Nominal values and limits from method 500 0.0100 100 180

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

AVERAGES ± 2 SD MDA 151 ± 4.00  
FOR 4 SAMPLES YIELD 55 ± 104

METHOD SUMMARIES  
Page 7  
SUMMARY DATA SECTION  
Page 19

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

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SDG 8612

Test RA Matrix WATER  
 SDG 8612  
 Contact Joseph Verville

LAB METHOD SUMMARY

RADIUM-226 IN WATER

RADON COUNTING

Client Test America, Inc.  
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RESULTS

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

Preparation batch 7271-144

|            |          |                          |     |
|------------|----------|--------------------------|-----|
| 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 |

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

METHOD PERFORMANCE

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

Preparation batch 7271-144 2σ prep error 16.4 % Reference Lab Notebook No. 7271 pg.012

|            |                          |       |       |     |     |    |          |       |        |
|------------|--------------------------|-------|-------|-----|-----|----|----------|-------|--------|
| S204070-01 | OUTFALL 002 (440-8694-1) | 0.587 | 0.100 | 100 | 105 | 21 | 05/04/12 | 05/04 | RN-012 |
| S204070-02 | 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 values and limits from method 1.00 0.100 100 180

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

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

METHOD SUMMARIES

Page 8

SUMMARY DATA SECTION

Page 20

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

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SDG 8612

SDG 8612  
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REPORT GUIDE

Client Test America, Inc.  
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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.

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 21

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 8612  
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REPORT GUIDE

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Contract 44002624

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

These qualifiers should be reviewed as follows:

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

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

REPORT GUIDES

Page 2

SUMMARY DATA SECTION

Page 22

|             |                 |
|-------------|-----------------|
| 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  
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REPORT GUIDE

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Contract 44002624

WORK SUMMARY

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

The following notes apply to this report:

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

REPORT GUIDES

Page 3

SUMMARY DATA SECTION

Page 23

|             |                 |
|-------------|-----------------|
| 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  
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REPORT GUIDE

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Contract 44002624

DATA SHEET

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

The following notes apply to this report:

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

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

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

The following qualifiers are defined by the DVD system:

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

REPORT GUIDES

Page 4

SUMMARY DATA SECTION

Page 24

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 8612  
Contact Joseph Verville

GUIDE, cont.

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Contract 44002624

DATA SHEET

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.
- Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.
- For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.
- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.
- Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

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

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SDG 8612

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GUIDE, cont.

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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.

REPORT GUIDES

Page 6

SUMMARY DATA SECTION

Page 26

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

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EBERLINE ANALYTICAL

SDG 8612

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REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

- \* REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- \* The first, computed limits for the recovery reflect:
  1. The error of RESULT, including that introduced by rounding the result prior to printing.  
  
If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
  2. The error of ADDED.
  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- \* The second limits are protocol defined upper and lower QC limits for the recovery.
- \* The recovery is underlined if it is outside either of these ranges.

REPORT GUIDES

Page 7

SUMMARY DATA SECTION

Page 27

|             |                 |
|-------------|-----------------|
| 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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 Contract 44002624

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.

REPORT GUIDES

Page 8

SUMMARY DATA SECTION

Page 28

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 8612  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

DUPLICATE

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

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

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

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

REPORT GUIDES

Page 9

SUMMARY DATA SECTION

Page 29

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 8612  
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

2. The error of ADDED.

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

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

REPORT GUIDES

Page 10

SUMMARY DATA SECTION

Page 30

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 8612  
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GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

MATRIX SPIKE

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

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

REPORT GUIDES

Page 11

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

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EBERLINE ANALYTICAL

SDG 8612

SDG 8612  
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 QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

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

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

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

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

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

REPORT GUIDES

Page 12

SUMMARY DATA SECTION

Page 32

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 8612  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
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.

\* Preparation factors are underlined if greater than the nominal value specified for the method.

\* Dilution factors are underlined if greater than the nominal value specified for the method.

\* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

\* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

\* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

\* Count times are underlined if less than the nominal value

REPORT GUIDES

Page 13

SUMMARY DATA SECTION

Page 33

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 8612  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

METHOD SUMMARY

specified for the method.

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

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

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

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

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

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

REPORT GUIDES

Page 14

SUMMARY DATA SECTION

Page 34

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 8612  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

METHOD SUMMARY

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

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

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

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

REPORT GUIDES

Page 15

SUMMARY DATA SECTION

Page 35

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







**RICHMOND, CA LABORATORY**  
SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA  
Date/Time received 4/17/12 10:00 CoC No. 440-4022.1, 440-4023.1, 440-4025.1 440-4028.1  
Container I.D. No. 3 ice chest Requested TAT (Days) STANDBY B.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? by 4/17/12 Yes [  ] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? splited into Yes [  ] No [ ] N/A [ ]
3. Custody seals on sample containers intact? 4 groups Yes [ ] No [ ] N/A [ ] N/A ✓
4. Custody seals on sample containers dated & signed? Yes [ ] No [ ] N/A [ ] N/A ✓
5. Packing material is: Wet [ ] Dry [ ] N/A ✓
6. Number of samples in shipping container: 5 Sample Matrix WATER
7. Number of containers per sample: \_\_\_\_\_ (Or see CoC  )
8. Samples are in correct container Yes [  ] No [ ]
9. Paperwork agrees with samples? Yes [  ] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [  ]
11. Samples are: In good condition [  ] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [  ] Not preserved [  ] pH 2/6 Preservative \_\_\_\_\_
13. Describe any anomalies:  
\_\_\_\_\_  
\_\_\_\_\_
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date \_\_\_\_\_
15. Inspected by JFK Date: 4/17/12 Time: 11:20

| Customer Sample No.        | Beta/Gamma cpm | Ion Chamber mR/hr | Wipe | Customer Sample No. | Beta/Gamma cpm | Ion Chamber mR/hr | wipe |
|----------------------------|----------------|-------------------|------|---------------------|----------------|-------------------|------|
| <u>ALL samples &lt; 80</u> |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |

Ion Chamber Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_  
Alpha Meter Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_  
Beta/Gamma Meter Ser. No. 100482 Calibration date 6 Dec 2011

# LABORATORY REPORT



**Aquatic  
Testing  
Laboratories**

*"dedicated to providing quality aquatic toxicity testing"*

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

**Date:** April 21, 2012  
**Client:** TestAmerica, Irvine  
17461 Derian Ave., Suite 100  
Irvine, CA 92614  
Attn: Debby Wilson

**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  
Temp. Received: 8.6°C  
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:

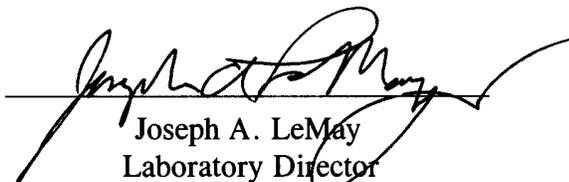
*Ceriodaphnia dubia* Survival and Reproduction Test (EPA Method 1002).

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:                          | <u>NOEC</u> | <u>TUc</u> |
|-----------------------------------|-------------|------------|
| <i>Ceriodaphnia</i> Survival:     | 100%        | 1.0        |
| <i>Ceriodaphnia</i> Reproduction: | 100%        | 1.0        |

**Quality Control:** Reviewed and approved by:

  
Joseph A. LeMay  
Laboratory Director

**CERIODAPHNIA CHRONIC BIOASSAY  
EPA METHOD 1002.0**



Lab No.: A-12041402-001  
Client/ID: TestAmerica - Outfall 002 (440-8694-1)

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

**TEST SUMMARY**

|   |  |
|---|--|
| Test type: Daily static-renewal.                | Endpoints: Survival and Reproduction.    |
| Species: <i>Ceriodaphnia dubia</i> .            | Source: In-laboratory culture.           |
| Age: < 24 hrs; all released within 8 hrs.       | Food: .1 ml YTC, algae per day.          |
| Test vessel size: 30 ml.                        | Test solution volume: 15 ml.             |
| Number of test organisms per vessel: 1.         | Number of replicates: 10.                |
| Temperature: 25 +/- 1°C.                        | Photoperiod: 16/8 hrs. light/dark cycle. |
| Dilution water: Mod. hard reconstituted (MHRW). | Test duration: 6 days.                   |
| QA/QC Batch No.: RT-120403.                     | 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 Control 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) |

**Ceriodaphnia Survival and Reproduction Test-Survival Day 6**

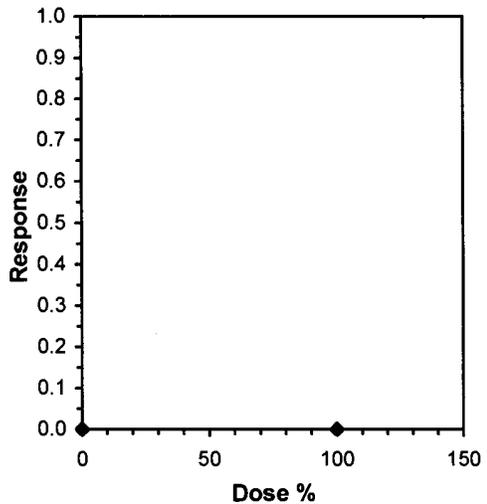
Start Date: 4/14/2012 15:00 Test ID: 12041402c Sample ID: Outfall 002  
 End Date: 4/20/2012 14:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/13/2012 17:54 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

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

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

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

| Linear Interpolation (200 Resamples) |      |    |        |      |
|--------------------------------------|------|----|--------|------|
| Point                                | %    | SD | 95% CL | Skew |
| IC05                                 | >100 |    |        |      |
| IC10                                 | >100 |    |        |      |
| IC15                                 | >100 |    |        |      |
| IC20                                 | >100 |    |        |      |
| IC25                                 | >100 |    |        |      |
| IC40                                 | >100 |    |        |      |
| IC50                                 | >100 |    |        |      |



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/14/2012 15:00 Test ID: 12041402c Sample ID: Outfall 002  
 End Date: 4/20/2012 14:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/13/2012 17:54 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia 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 |

| Conc-%    | Mean   | N-Mean | Transform: Untransformed |        |        |        |    | Rank Sum | 1-Tailed Critical | Isotonic |        |
|-----------|--------|--------|--------------------------|--------|--------|--------|----|----------|-------------------|----------|--------|
|           |        |        | Mean                     | Min    | Max    | CV%    | N  |          |                   | 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 |

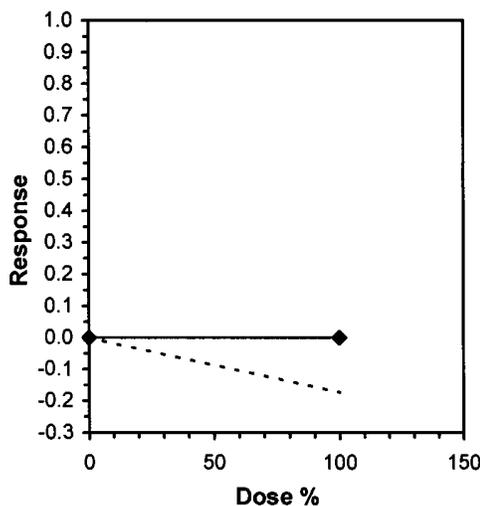
| Auxiliary Tests   | Statistic | Critical | Skew    | Kurt    |
|---|-----------|----------|---------|---------|
| Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05) | 0.8673    | 0.905    | -1.1943 | 1.10599 |
| F-Test indicates equal variances (p = 0.17)                       | 2.57965   | 6.54109  |         |         |

**Hypothesis Test (1-tail, 0.05)**

Wilcoxon Two-Sample Test indicates no significant differences

Treatments vs D-Control

| Point | %    | SD | Linear Interpolation (200 Resamples) |      |
|-------|------|----|--------------------------------------|------|
|       |      |    | 95% CL                               | Skew |
| IC05  | >100 |    |                                      |      |
| IC10  | >100 |    |                                      |      |
| IC15  | >100 |    |                                      |      |
| IC20  | >100 |    |                                      |      |
| IC25  | >100 |    |                                      |      |
| IC40  | >100 |    |                                      |      |
| IC50  | >100 |    |                                      |      |



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/14/2012 15:00 Test ID: 12041402c Sample ID: Outfall 002  
 End Date: 4/20/2012 14:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/13/2012 17:54 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia 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 |

| Conc-%    | Mean   | N-Mean | Transform: Untransformed |        |        |        |          | N      | t-Stat | 1-Tailed |  |
|-----------|--------|--------|--------------------------|--------|--------|--------|----------|--------|--------|----------|--|
|           |        |        | Mean                     | Min    | Max    | CV%    | 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 distribution (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<br>Treatments vs D-Control                         | 100       | >100     |         | 1       | 2.49037 | 0.11118 | 76.05 | 10.3611 | 0.01437 | 1, 18 |

**CERIODAPHNIA DUBIA CHRONIC BIOASSAY  
EPA METHOD 1002.0 Raw Data Sheet**



Lab No.: A-12041402-001

Client ID: TestAmerica - Outfall 002

Start Date: 04/14/2012

|                   |      | DAY 1 |      | DAY 2 |      | DAY 3 |      | DAY 4 |      | DAY 5 |      | DAY 6 |      | DAY 7 |      |   |
|-------------------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|---|
|                   |      | 0 hr  | 24hr |   |
| Analyst Initials: |      | Z     | Z    | Z     | Z    | Z     | Z    | Z     | Z    | Z     | Z    | Z     | Z    | -     | -    |   |
| Time of Readings: |      | 1500  | 1500 | 1500  | 1500 | 1500  | 1430 | 1430  | 1500 | 1500  | 1500 | 1420  | 1430 | 1430  | -    | - |
| Control           | DO   | 8.4   | 8.3  | 8.4   | 7.7  | 7.9   | 7.8  | 8.0   | 7.8  | 8.2   | 7.9  | 8.9   | 8.1  | -     | -    |   |
|                   | pH   | 8.1   | 8.1  | 8.1   | 8.1  | 8.1   | 8.1  | 8.1   | 8.0  | 8.1   | 8.1  | 8.1   | 8.2  | -     | -    |   |
|                   | Temp | 24.7  | 24.1 | 24.3  | 24.2 | 24.5  | 24.6 | 24.3  | 24.3 | 24.2  | 24.3 | 24.7  | 24.9 | -     | -    |   |
| 100%              | DO   | 9.2   | 8.7  | 9.3   | 8.1  | 9.5   | 8.1  | 9.7   | 7.8  | 9.8   | 7.9  | 9.8   | 7.9  | -     | -    |   |
|                   | pH   | 7.8   | 8.1  | 7.9   | 8.0  | 7.8   | 8.0  | 7.6   | 8.0  | 7.7   | 8.0  | 7.8   | 8.1  | -     | -    |   |
|                   | Temp | 24.3  | 24.3 | 24.7  | 24.2 | 24.2  | 24.3 | 24.3  | 24.3 | 24.6  | 24.3 | 24.3  | 25.0 | -     | -    |   |

| Additional Parameters                | Control | 100% Sample |
|--------------------------------------|---------|-------------|
| Conductivity (umohms)                | 776     | 552         |
| Alkalinity (mg/l CaCO <sub>3</sub> ) | 68      | 78          |
| Hardness (mg/l CaCO <sub>3</sub> )   | 99      | 117         |
| Ammonia (mg/l NH <sub>3</sub> -N)    | <0.1    | 0.5         |

| Source of Neonates |    |    |    |    |    |    |    |    |     |    |  |
|--------------------|----|----|----|----|----|----|----|----|-----|----|--|
| Replicate:         | A  | B  | C  | D  | E  | F  | G  | H  | I   | J  |  |
| Brood ID:          | 1A | 3A | 2B | 7B | 1C | 3C | 16 | 36 | 214 | 2C |  |

| Sample  | Day   | Number of Young Produced |    |    |    |    |    |    |    |    |    | Total Live Young | No. Live Adults | Analyst Initials |
|---------|-------|--------------------------|----|----|----|----|----|----|----|----|----|------------------|-----------------|------------------|
|         |       | A                        | B  | C  | D  | E  | F  | G  | H  | I  | J  |                  |                 |                  |
| Control | 1     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | Z                |
|         | 2     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | Z                |
|         | 3     | 0                        | 0  | 0  | 0  | 3  | 0  | 0  | 5  | 0  | 4  | 12               | 10              | Z                |
|         | 4     | 5                        | 4  | 5  | 4  | 0  | 4  | 3  | 0  | 4  | 0  | 29               | 10              | Z                |
|         | 5     | 0                        | 8  | 9  | 0  | 10 | 7  | 8  | 10 | 8  | 7  | 67               | 10              | Z                |
|         | 6     | 10                       | 12 | 10 | 12 | 11 | 12 | 14 | 12 | 10 | 13 | 116              | 10              | Z                |
|         | 7     | -                        | -  | -  | -  | -  | -  | -  | -  | -  | -  | -                | -               | -                |
|         | Total | 15                       | 24 | 24 | 16 | 24 | 23 | 25 | 27 | 22 | 24 | 224              | 10              | Z                |
| 100%    | 1     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 10               | Z               |                  |
|         | 2     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 10               | Z               |                  |
|         | 3     | 3                        | 4  | 0  | 0  | 0  | 5  | 0  | 0  | 0  | 4  | 16               | 10              | Z                |
|         | 4     | 0                        | 0  | 5  | 4  | 5  | 0  | 5  | 4  | 4  | 0  | 27               | 10              | Z                |
|         | 5     | 10                       | 10 | 9  | 9  | 9  | 9  | 10 | 10 | 9  | 7  | 92               | 10              | Z                |
|         | 6     | 15                       | 12 | 14 | 12 | 13 | 12 | 15 | 13 | 12 | 10 | 128              | 10              | Z                |
|         | 7     | -                        | -  | -  | -  | -  | -  | -  | -  | -  | -  | -                | -               | -                |
|         | Total | 28                       | 26 | 28 | 25 | 27 | 26 | 30 | 27 | 25 | 21 | 263              | 10              | Z                |

Circled fourth brood not used in statistical analysis.

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

# ***CHAIN OF CUSTODY***

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13



**TestAmerica Irvine**  
 17481 Derlan Ave Suite 100  
 Irvine, CA 92614-5617  
 Phone (949) 261-1022 Fax (949) 260-3297

**Chain of Custody Record**

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

|  |                              |                     |          |                      |                         |
|--|------------------------------|---------------------|----------|----------------------|-------------------------|
| <b>Client Information (Sub Contract Lab)</b>   |                              | Sample:             | Lab Pk:  | Center/Trading Note: | COC No:                 |
| Client Contact:  | Wilson, Dobby                | Phone:              | E-Mail:  |                      | 440-4008.1              |
| Shipping/Receiving:  | dobby.wilson@testamerica.com |                     |          |                      | Page 1 of 1             |
| Company:   |                              |                     |          |                      | Job #: 440-9894-1       |
| Aquatic Testing Laboratories   |                              |                     |          |                      |                         |
| Address:   | 4350 Transport #407          | Our Rate Requester: |          |                      | Preservation Codes:     |
| City:  | TAT Requested (days):        | 4/20/2012           |          |                      | A - HCL                 |
| Vendor:  |                              |                     |          |                      | B - HCHO                |
| State, Zip:  |                              |                     |          |                      | C - Zn Acetate          |
| CA, 92603  |                              |                     |          |                      | D - Nitric Acid         |
| Phone:   |                              |                     |          |                      | E - Nitric Acid         |
|  |                              |                     |          |                      | F - NaOH                |
|  |                              |                     |          |                      | G - Ascorbic Acid       |
|  |                              |                     |          |                      | H - Ascorbic Acid       |
|  |                              |                     |          |                      | I - Ice                 |
|  |                              |                     |          |                      | J - DI Water            |
|  |                              |                     |          |                      | K - EDTA                |
|  |                              |                     |          |                      | L - BDA                 |
|  |                              |                     |          |                      | M - None                |
|  |                              |                     |          |                      | N - None                |
|  |                              |                     |          |                      | O - AsHClO2             |
|  |                              |                     |          |                      | P - NaOH                |
|  |                              |                     |          |                      | Q - Na2SO3              |
|  |                              |                     |          |                      | R - Na2S2O3             |
|  |                              |                     |          |                      | S - H2SO4               |
|  |                              |                     |          |                      | T - TSP Dedicatelydrile |
|  |                              |                     |          |                      | U - Acetone             |
|  |                              |                     |          |                      | V - HCl/A               |
|  |                              |                     |          |                      | W - DI H2O              |
|  |                              |                     |          |                      | Z - other (specify)     |
|  |                              |                     |          |                      | Other:                  |
| Project Name:  | Routine Outfall 002          | Project #:          | 44002824 |                      |                         |
| Site:  | Boaling SSFL                 | SSONR:              |          |                      |                         |
| <b>Sample Identification - Client ID (Lab ID)</b>  |                              |                     |          |                      |                         |
| Outfall 002 (440-8894-1)   | 4/13/12                      | 17:54               | Pacific  | Water                | X                       |
| <b>Analysis Requested</b>  |                              |                     |          |                      |                         |
| SUBCONTRACT/ Chronic Cert, EPA/821-R02-013   |                              |                     |          |                      |                         |
| <b>Special Instructions/Notes:</b>   |                              |                     |          |                      |                         |
| Sample Disposal (A fee may be assessed if samples are retained longer than 3 months)   |                              |                     |          |                      |                         |
| <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months |                              |                     |          |                      |                         |
| Special Instructions/QC Requirements:  |                              |                     |          |                      |                         |
| Empty Kill Retinquished by:  |                              | Date:               | Time:    | Method of Shipment:  |                         |
| Retinquished by:   |                              | Date/Time:          | Company: | Received by:         | Date/Time:              |
| Retinquished by:   |                              | Date/Time:          | Company: | Received by:         | Date/Time:              |
| Retinquished by:   |                              | Date/Time:          | Company: | Received by:         | Date/Time:              |
| Quantity Blank (ref):  |                              | Quantity Seal No:   |          |                      |                         |
| A: 98  |                              | A: NO               |          |                      |                         |



***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 Survival |   | Mean Number of Young Per Female |    |
|----------------------|------------------|---|---------------------------------|----|
| 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)                             |

**Ceriodaphnia Survival and Reproduction Test-Survival Day 6**

Start Date: 4/3/2012 14:00    Test ID: RT120403c    Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia dubia

Comments:

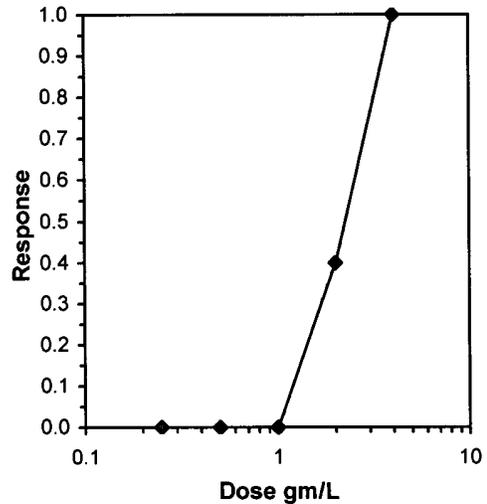
| Conc-gm/L | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-Control | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000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

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

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

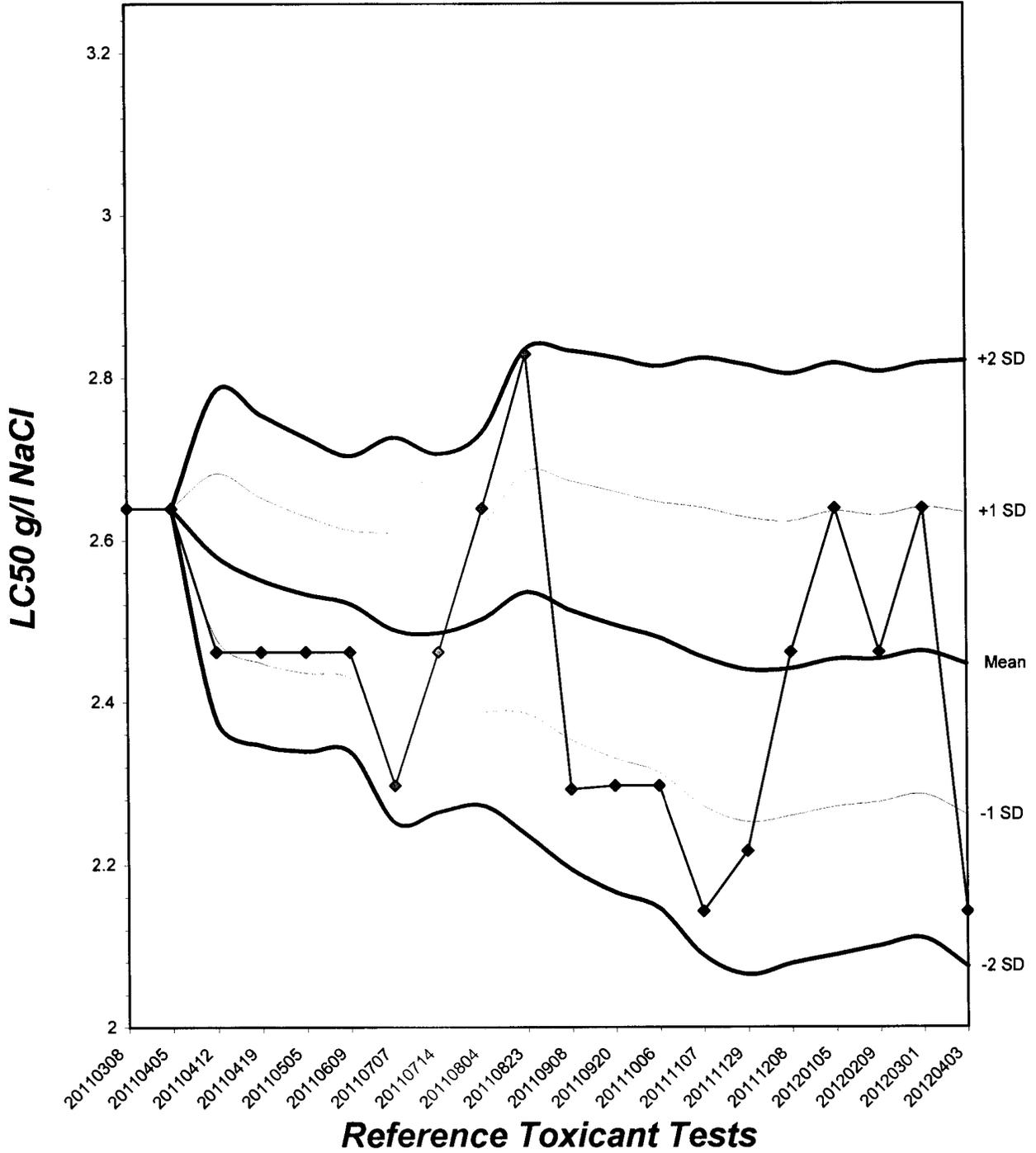
**Trimmed Spearman-Kärber**

| 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

CV% = 7.61



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/3/2012 14:00    Test ID: RT120403c    Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia 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  |

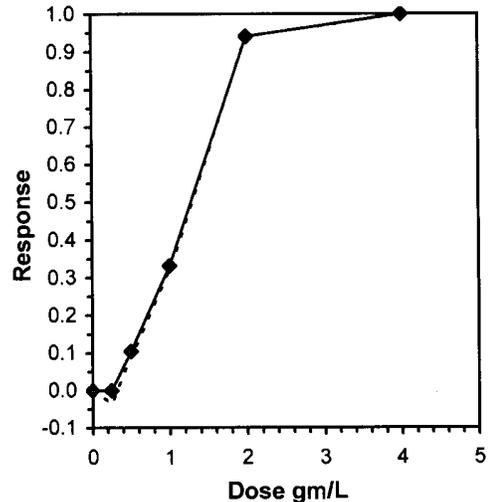
| Conc-gm/L | Transform: Untransformed |        |        |        |        |         |    | Rank Sum | 1-Tailed Critical | Isotonic |        |
|-----------|--------------------------|--------|--------|--------|--------|---------|----|----------|-------------------|----------|--------|
|           | Mean                     | N-Mean | Mean   | Min    | Max    | CV%     | N  |          |                   | Mean     | N-Mean |
| D-Control | 23.500                   | 1.0000 | 23.500 | 17.000 | 28.000 | 15.441  | 10 |          |                   | 23.900   | 1.0000 |
| 0.25      | 24.300                   | 1.0340 | 24.300 | 17.000 | 29.000 | 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  | 5.000  | 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 non-normal distribution (p <= 0.05) | 0.93053   | 0.94     | -0.5964 | -0.342 |
| Bartlett's Test indicates equal variances (p = 0.53)              | 2.22089   | 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        |      |      |         |    |

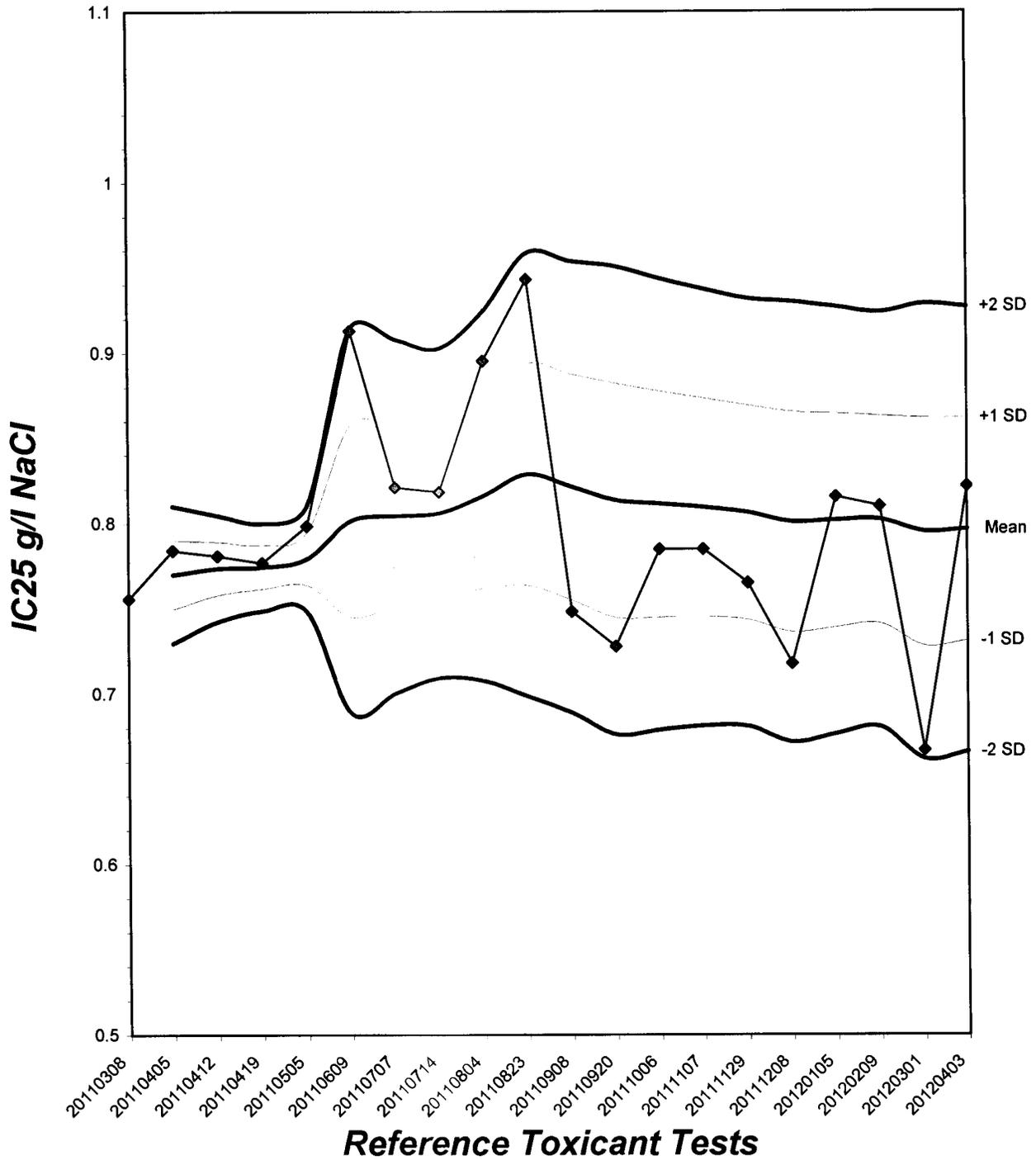
**Linear Interpolation (200 Resamples)**

| 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 | 0.6622 | 0.1815  |
| IC15  | 0.6005 | 0.1009 | 0.4034 | 0.7714 | 0.1407  |
| IC20  | 0.7111 | 0.1157 | 0.4592 | 0.9579 | 0.1807  |
| IC25  | 0.8218 | 0.1195 | 0.5745 | 1.0536 | 0.0455  |
| IC40  | 1.1137 | 0.1010 | 0.8928 | 1.2609 | -0.5191 |
| IC50  | 1.2774 | 0.0905 | 1.0680 | 1.4019 | -0.8577 |



# Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 8.18



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/3/2012 14:00    Test ID: RT120403c    Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia 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  |

| Conc-gm/L | Mean   | N-Mean | Transform: Untransformed |        |        |         |          | N      | t-Stat | 1-Tailed |  |
|-----------|--------|--------|--------------------------|--------|--------|---------|----------|--------|--------|----------|--|
|           |        |        | Mean                     | Min    | Max    | CV%     | 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 distribution (p <= 0.05) |  |  | 0.93053   | 0.94     | -0.5964 | -0.342 |         |        |       |         |         |       |
| Bartlett's Test indicates equal variances (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   |  |  |           |          |         |        |         |        |       |         |         |       |

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



QA/QC No.: RT-120403

Start Date: 04/03/2012

| Sample   | Day   | Number of Young Produced |    |    |    |    |    |    |    |    |    | Total Live Young | No. Live Adults | Analyst Initials |
|----------|-------|--------------------------|----|----|----|----|----|----|----|----|----|------------------|-----------------|------------------|
|          |       | A                        | B  | C  | D  | E  | F  | G  | H  | I  | J  |                  |                 |                  |
| Control  | 1     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | [Signature]      |
|          | 2     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              |                  |
|          | 3     | 0                        | 0  | 0  | 0  | 3  | 0  | 4  | 3  | 0  | 0  | 10               | 10              |                  |
|          | 4     | 3                        | 5  | 4  | 4  | 0  | 4  | 0  | 0  | 3  | 4  | 27               | 10              |                  |
|          | 5     | 0                        | 0  | 10 | 8  | 8  | 9  | 9  | 10 | 7  | 8  | 69               | 10              |                  |
|          | 6     | 17                       | 12 | 11 | 13 | 13 | 14 | 15 | 14 | 10 | 10 | 129              | 10              |                  |
|          | 7     | -                        | -  | -  | -  | -  | -  | -  | -  | -  | -  | -                | -               |                  |
|          | Total | 20                       | 17 | 25 | 25 | 24 | 27 | 28 | 27 | 20 | 22 | 235              | 10              |                  |
| 0.25 g/l | 1     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | [Signature]      |
|          | 2     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              |                  |
|          | 3     | 0                        | 0  | 0  | 0  | 4  | 0  | 4  | 0  | 0  | 0  | 8                | 10              |                  |
|          | 4     | 5                        | 4  | 5  | 5  | 0  | 4  | 0  | 5  | 4  | 4  | 36               | 10              |                  |
|          | 5     | 0                        | 0  | 10 | 9  | 10 | 9  | 7  | 9  | 9  | 8  | 71               | 10              |                  |
|          | 6     | 16                       | 13 | 14 | 12 | 13 | 12 | 14 | 13 | 10 | 11 | 128              | 10              |                  |
|          | 7     | -                        | -  | -  | -  | -  | -  | -  | -  | -  | -  | -                | -               |                  |
|          | Total | 21                       | 17 | 29 | 26 | 27 | 25 | 25 | 27 | 23 | 23 | 243              | 10              |                  |
| 0.5 g/l  | 1     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | [Signature]      |
|          | 2     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              |                  |
|          | 3     | 0                        | 0  | 0  | 0  | 0  | 0  | 4  | 0  | 0  | 0  | 4                | 10              |                  |
|          | 4     | 4                        | 4  | 3  | 3  | 5  | 4  | 0  | 3  | 4  | 4  | 34               | 10              |                  |
|          | 5     | 0                        | 0  | 7  | 9  | 8  | 7  | 9  | 7  | 7  | 8  | 62               | 10              |                  |
|          | 6     | 12                       | 10 | 13 | 10 | 11 | 12 | 10 | 13 | 12 | 11 | 114              | 10              |                  |
|          | 7     | -                        | -  | -  | -  | -  | -  | -  | -  | -  | -  | -                | -               |                  |
|          | Total | 16                       | 14 | 23 | 22 | 24 | 23 | 23 | 23 | 23 | 23 | 214              | 10              |                  |

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

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



QA/QC No.: RT-120403

Start Date: 04/03/2012

| Sample  | Day   | Number of Young Produced |    |   |    |    |    |    |    |   |    | Total Live Young | No. Live Adults | Analyst Initials |
|---------|-------|--------------------------|----|---|----|----|----|----|----|---|----|------------------|-----------------|------------------|
|         |       | A                        | B  | C | D  | E  | F  | G  | H  | I | J  |                  |                 |                  |
| 1.0 g/l | 1     | 0                        | 0  | 0 | 0  | 0  | 0  | 0  | 0  | 0 | 0  | 0                | 10              | [Signature]      |
|         | 2     | 0                        | 0  | 0 | 0  | 0  | 0  | 0  | 0  | 0 | 0  | 0                | 10              |                  |
|         | 3     | 0                        | 0  | 0 | 0  | 3  | 0  | 0  | 0  | 0 | 0  | 3                | 10              |                  |
|         | 4     | 3                        | 4  | 2 | 3  | 0  | 3  | 4  | 4  | 2 | 3  | 28               | 10              |                  |
|         | 5     | 0                        | 0  | 0 | 7  | 7  | 0  | 8  | 7  | 7 | 6  | 47               | 10              |                  |
|         | 6     | 12                       | 13 | 6 | 10 | 13 | 12 | 0  | 11 | 0 | 10 | 87               | 10              |                  |
|         | 7     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                | -               |                  |
|         | Total | 15                       | 17 | 8 | 20 | 23 | 15 | 12 | 22 | 9 | 19 | 160              | 10              |                  |
| 2.0 g/l | 1     | 0                        | 0  | 0 | 0  | 0  | 0  | 0  | 0  | 0 | 0  | 10               | [Signature]     |                  |
|         | 2     | X                        | X  | 0 | 0  | 0  | 0  | X  | X  | 0 | 0  | 0                |                 | 6                |
|         | 3     | -                        | -  | 0 | 0  | 0  | 0  | -  | -  | 0 | 0  | 0                |                 | 6                |
|         | 4     | -                        | -  | 0 | 0  | 0  | 0  | -  | -  | 0 | 0  | 0                |                 | 6                |
|         | 5     | -                        | -  | 0 | 2  | 2  | 3  | -  | -  | 0 | 2  | 9                |                 | 6                |
|         | 6     | -                        | -  | 0 | 0  | 2  | 0  | -  | -  | 0 | 3  | 5                |                 | 6                |
|         | 7     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 | -                |
|         | Total | 0                        | 0  | 0 | 2  | 4  | 3  | 0  | 0  | 0 | 5  | 14               |                 | 6                |
| 4.0 g/l | 1     | X                        | X  | X | X  | X  | X  | X  | X  | X | 0  | 0                | [Signature]     |                  |
|         | 2     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | 3     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | 4     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | 5     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | 6     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | 7     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | Total | 0                        | 0  | 0 | 0  | 0  | 0  | 0  | 0  | 0 | 0  | 0                |                 | 0                |

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

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



QA/QC No.: RT-120403

Start Date: 04/03/2012

|                   |      | DAY 1   |       | DAY 2   |       | DAY 3   |       | DAY 4   |       | DAY 5   |       | DAY 6   |       | DAY 7   |       |
|-------------------|------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|
|                   |      | Initial | Final |
| Analyst Initials: |      | J       | Z     | Z       | Z     | Z       | Z     | Z       | Z     | Z       | Z     | Z       | Z     | Z       | Z     |
| Time of Readings: |      | 1400    | 1400  | 1400    | 1400  | 1400    | 1400  | 1400    | 1400  | 1400    | 1400  | 1400    | 1400  | —       | —     |
| Control           | DO   | 8.3     | 8.2   | 7.9     | 8.6   | 7.8     | 8.5   | 7.9     | 8.4   | 8.5     | 8.7   | 8.3     | 8.6   | —       | —     |
|                   | pH   | 8.0     | 8.2   | 8.1     | 8.1   | 8.2     | 8.2   | 8.1     | 8.2   | 8.1     | 8.0   | 8.1     | 8.0   | —       | —     |
|                   | Temp | 24.7    | 24.7  | 24.3    | 24.3  | 24.6    | 24.7  | 24.8    | 24.7  | 24.8    | 24.4  | 24.3    | 24.5  | —       | —     |
| 0.25 g/l          | DO   | 8.4     | 8.4   | 8.2     | 8.6   | 8.4     | 8.3   | 8.3     | 8.3   | 7.9     | 8.6   | 8.3     | 8.7   | —       | —     |
|                   | pH   | 8.0     | 8.1   | 8.2     | 8.2   | 8.2     | 8.2   | 8.1     | 8.2   | 8.1     | 8.0   | 8.1     | 8.0   | —       | —     |
|                   | 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  | —       | —     |
| 0.5 g/l           | 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   | —       | —     |
|                   | pH   | 8.0     | 8.1   | 8.2     | 8.1   | 8.2     | 8.2   | 8.1     | 8.1   | 8.1     | 8.0   | 8.1     | 8.0   | —       | —     |
|                   | Temp | 24.6    | 24.9  | 24.5    | 24.2  | 24.3    | 24.8  | 24.3    | 24.8  | 24.8    | 24.3  | 24.7    | 25.2  | —       | —     |
| 1.0 g/l           | 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   | —       | —     |
|                   | pH   | 8.0     | 8.2   | 8.2     | 8.2   | 8.2     | 8.1   | 8.1     | 8.1   | 8.1     | 8.1   | 8.1     | 8.0   | —       | —     |
|                   | Temp | 24.7    | 24.7  | 24.5    | 24.5  | 24.5    | 24.7  | 24.7    | 24.6  | 24.8    | 24.7  | 24.5    | 24.5  | —       | —     |
| 2.0 g/l           | 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   | —       | —     |
|                   | pH   | 8.0     | 8.1   | 8.2     | 8.1   | 8.2     | 8.1   | 8.0     | 8.1   | 8.1     | 8.0   | 8.0     | 8.0   | —       | —     |
|                   | 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  | —       | —     |
| 4.0 g/l           | DO   | 8.5     | 8.1   | —       | —     | —       | —     | —       | —     | —       | —     | —       | —     | —       | —     |
|                   | pH   | 8.0     | 8.1   | —       | —     | —       | —     | —       | —     | —       | —     | —       | —     | —       | —     |
|                   | Temp | 24.7    | 24.5  | —       | —     | —       | —     | —       | —     | —       | —     | —       | —     | —       | —     |

Dissolved Oxygen (DO) readings are in mg/l O<sub>2</sub>; Temperature (Temp) readings are in °C.

| Additional Parameters                | Control |       |       | High Concentration |       |       |
|--------------------------------------|---------|-------|-------|--------------------|-------|-------|
|                                      | Day 1   | Day 3 | Day 5 | Day 1              | Day 3 | Day 5 |
| Conductivity (µS)                    | 309     | 319   | 316   | 6960               | 2520  | 3310  |
| Alkalinity (mg/l CaCO <sub>3</sub> ) | 69      | 67    | 67    | 68                 | 68    | 68    |
| Hardness (mg/l CaCO <sub>3</sub> )   | 90      | 87    | 88    | 90                 | 89    | 88    |

Source of Neonates

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





440-86664  
Comp\_1 of 3

CHAIN OF CUSTODY FORM

|  |                    |   |                 |  |                                  |                |  |  |  |   |  |  |  |   |   |   |   |                          |                          |
|--|--------------------|---|-----------------|--|----------------------------------|----------------|--|--|--|---|--|--|--|---|---|---|---|--------------------------|--------------------------|
| Client Name/Address:<br>MWH-Arcadia<br>618 Michillinda Ave, Suite 200<br>Arcadia, CA 91007<br><br>Test America Contact: Debby Wilson |                    | Project:<br>Boeing-SSFL NPDES<br>Routine Outfall 002<br>COMPOSITE |                 | ANALYSIS REQUIRED<br>ethylhexyl)phthalate, NDMA, PCP (SVOCs 625)<br>Alpha BHC (608) /<br>Ammonia-N (350.2)<br>Turbidity, TDS, TSS<br>Nitrate-N, Nitrite-N<br>Cl <sup>-</sup> , SO <sub>4</sub> <sup>2-</sup> , NO <sub>3</sub> <sup>-</sup> +NO <sub>2</sub> <sup>-</sup> , Perchlorate<br>Surfactants (MBAS)<br>BOD <sub>5</sub> (20 degrees C)<br>TCDD (and all congeners)<br>Se, Zn, Fe<br>Total Recoverable Metals: Cu, Pb, Hg, Cd |                                  |                |  |  |  |   |  |  |  | Comments  |   |   |   |                          |                          |
| Project Manager: Bronwyn Kelly<br>Sampler: Rick Barton   |                    | Phone Number:<br>(626) 568-6691<br>Fax Number:<br>(626) 568-6515  |                 | Sampling Date/Time<br>4-13-2012<br>17:54   | Preservative<br>HNO <sub>3</sub> | Bottle #<br>6A | Total Recoverable Metals: Cu, Pb, Hg, Cd<br><input type="checkbox"/> | Se, Zn, Fe<br><input type="checkbox"/> | TCDD (and all congeners)<br><input type="checkbox"/> | BOD <sub>5</sub> (20 degrees C)<br><input type="checkbox"/> | Surfactants (MBAS)<br><input type="checkbox"/> | Cl <sup>-</sup> , SO <sub>4</sub> <sup>2-</sup> , NO <sub>3</sub> <sup>-</sup> +NO <sub>2</sub> <sup>-</sup> , Perchlorate<br><input type="checkbox"/> | Nitrate-N, Nitrite-N<br><input type="checkbox"/> | Turbidity, TDS, TSS<br><input type="checkbox"/> | Ammonia-N (350.2)<br><input type="checkbox"/> | Alpha BHC (608) /<br><input type="checkbox"/> | ethylhexyl)phthalate, NDMA, PCP (SVOCs 625)<br><input type="checkbox"/> | Comments                 |                          |
| Sample Description<br>Outfall 002  | Sample Matrix<br>W | Container Type<br>1L Poly   | # of Cont.<br>1 | Sampling Date/Time<br>4-13-2012<br>17:54   | Preservative<br>HNO <sub>3</sub> | Bottle #<br>6A | <input type="checkbox"/>   | <input type="checkbox"/>               | <input type="checkbox"/>                             | <input type="checkbox"/>                                    | <input type="checkbox"/>                       | <input type="checkbox"/>   | <input type="checkbox"/>                         | <input type="checkbox"/>                        | <input type="checkbox"/>                      | <input type="checkbox"/>                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| Outfall 002 Dup  | W                  | 1L Poly   | 1               | 4-13-2012<br>17:54   | HNO <sub>3</sub>                 | 6B             | <input type="checkbox"/>   | <input type="checkbox"/>               | <input type="checkbox"/>                             | <input type="checkbox"/>                                    | <input type="checkbox"/>                       | <input type="checkbox"/>   | <input type="checkbox"/>                         | <input type="checkbox"/>                        | <input type="checkbox"/>                      | <input type="checkbox"/>                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| Outfall 002  | W                  | 1L Amber  | 2               | 4-13-2012<br>17:54   | None                             | 7A, 7B         | <input type="checkbox"/>   | <input type="checkbox"/>               | <input type="checkbox"/>                             | <input type="checkbox"/>                                    | <input type="checkbox"/>                       | <input type="checkbox"/>   | <input type="checkbox"/>                         | <input type="checkbox"/>                        | <input type="checkbox"/>                      | <input type="checkbox"/>                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| Outfall 002  | W                  | 1L Poly   | 1               | 4-13-2012<br>17:54   | None                             | 8              | <input type="checkbox"/>   | <input type="checkbox"/>               | <input type="checkbox"/>                             | <input type="checkbox"/>                                    | <input type="checkbox"/>                       | <input type="checkbox"/>   | <input type="checkbox"/>                         | <input type="checkbox"/>                        | <input type="checkbox"/>                      | <input type="checkbox"/>                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| Outfall 002  | W                  | 500 mL Poly   | 2               | 4-13-2012<br>17:54   | None                             | 9A, 9B         | <input type="checkbox"/>   | <input type="checkbox"/>               | <input type="checkbox"/>                             | <input type="checkbox"/>                                    | <input type="checkbox"/>                       | <input type="checkbox"/>   | <input type="checkbox"/>                         | <input type="checkbox"/>                        | <input type="checkbox"/>                      | <input type="checkbox"/>                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| Outfall 002  | W                  | 500 mL Poly   | 2               | 4-13-2012<br>17:54   | None                             | 10A, 10B       | <input type="checkbox"/>   | <input type="checkbox"/>               | <input type="checkbox"/>                             | <input type="checkbox"/>                                    | <input type="checkbox"/>                       | <input type="checkbox"/>   | <input type="checkbox"/>                         | <input type="checkbox"/>                        | <input type="checkbox"/>                      | <input type="checkbox"/>                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| Outfall 002  | W                  | 500 mL Poly   | 1               | 4-13-2012<br>17:54   | None                             | 11             | <input type="checkbox"/>   | <input type="checkbox"/>               | <input type="checkbox"/>                             | <input type="checkbox"/>                                    | <input type="checkbox"/>                       | <input type="checkbox"/>   | <input type="checkbox"/>                         | <input type="checkbox"/>                        | <input type="checkbox"/>                      | <input type="checkbox"/>                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| Outfall 002  | W                  | 500 mL Poly   | 2               | 4-13-2012<br>17:54   | None                             | 12A, 12B       | <input type="checkbox"/>   | <input type="checkbox"/>               | <input type="checkbox"/>                             | <input type="checkbox"/>                                    | <input type="checkbox"/>                       | <input type="checkbox"/>   | <input type="checkbox"/>                         | <input type="checkbox"/>                        | <input type="checkbox"/>                      | <input type="checkbox"/>                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| Outfall 002  | W                  | 500 mL Poly   | 1               | 4-13-2012<br>17:54   | H <sub>2</sub> SO <sub>4</sub>   | 13             | <input type="checkbox"/>   | <input type="checkbox"/>               | <input type="checkbox"/>                             | <input type="checkbox"/>                                    | <input type="checkbox"/>                       | <input type="checkbox"/>   | <input type="checkbox"/>                         | <input type="checkbox"/>                        | <input type="checkbox"/>                      | <input type="checkbox"/>                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| Outfall 002  | W                  | 1L Amber  | 2               | 4-13-2012<br>17:54   | None                             | 14A, 14B       | <input type="checkbox"/>   | <input type="checkbox"/>               | <input type="checkbox"/>                             | <input type="checkbox"/>                                    | <input type="checkbox"/>                       | <input type="checkbox"/>   | <input type="checkbox"/>                         | <input type="checkbox"/>                        | <input type="checkbox"/>                      | <input type="checkbox"/>                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| Outfall 002  | W                  | 1L Amber  | 2               | 4-13-2012<br>17:54   | None                             | 15A, 15B       | <input type="checkbox"/>   | <input type="checkbox"/>               | <input type="checkbox"/>                             | <input type="checkbox"/>                                    | <input type="checkbox"/>                       | <input type="checkbox"/>   | <input type="checkbox"/>                         | <input type="checkbox"/>                        | <input type="checkbox"/>                      | <input type="checkbox"/>                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |

COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 002 for this storm event.

These must be added to the same work order for COC Page 1 of 3 for Outfall 002 for the same event.

|  |                                  |   |                                |   |
|--|----------------------------------|---|--------------------------------|---|
| Relinquished By<br> | Date/Time:<br>4-14-2012<br>12:35 | Received By<br> | Date/Time:<br>4-14-12<br>12:35 | Turn-around time: (Check)<br>24 Hour: _____ 72 Hour: _____ 10 Day: _____<br>48 Hour: _____ 5 Day: _____ Normal: <input checked="" type="checkbox"/> |
| Relinquished By<br> | Date/Time:<br>4-14-12<br>16:15   | Received By<br> | Date/Time:<br>4-14-12<br>16:15 | Sample Integrity: (Check)<br>Intact: <input checked="" type="checkbox"/> On Ice: <input checked="" type="checkbox"/>                                |
| Relinquished By<br> | Date/Time:<br>4-14-12<br>16:15   | Received By<br> | Date/Time:<br>4-14-12<br>16:15 | Data Requirements: (Check)<br>No Level IV: _____ All Level IV: _____ NPDES Level IV: <input checked="" type="checkbox"/>                            |

CHAIN OF CUSTODY FORM

|   |                    |   |                              |  |                    |                                |          |  |  |  |  |                                     |  |                                     |  |
|---|--------------------|---|------------------------------|--|--------------------|--------------------------------|----------|--|--|--|--|-------------------------------------|--|-------------------------------------|--|
| Client Name/Address:<br>MWH-Arcadia<br>618 Michillinda Ave, Suite 200<br>Arcadia, CA 91007      |                    | Project:<br>Boeing-SSFL NPDES<br>Routine Outfall 002<br>COMPOSITE |                              | ANALYSIS REQUIRED                                  |                    |                                |          |  |  |  |  |                                     |  | Comments                            |  |
| Test America Contact: Debby Wilson  |                    | Phone Number:<br>(626) 568-6691<br>Fax Number:<br>(626) 568-6515  |                              | Total Dissolved Metals: Cu, Pb, Hg, Cd, Se, Zn, Fe |                    | Chronic Toxicity               |          | Cyanide  |  | Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1) |  | Filter w/in 24hrs of receipt at lab |  |                                     |  |
| Project Manager: Bronwyn Kelly<br>Sampler: Rick Barac   | Sample Description | Sample Matrix   | Container Type               | # of cont.   | Sampling Date/Time | Preservative                   | Bottle # | Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1) |  | Chronic Toxicity   |  | Cyanide                             |  | Unfiltered and unpreserved analysis | Only test if first or second rain events of the year |
|   | Outfall 002        | W   | 1L Poly                      | 1  | 4-13-2012<br>17:54 | None                           | 16       | X  |  | X  |  |                                     |  |                                     |  |
|   | Outfall 002        | W   | 2.5 Gal Cube<br>500 mL Amber | 1  |                    | None                           | 17A      | X  |  |  |  |                                     |  |                                     |  |
|   | Outfall 002        | W   | 1 Gal Cube                   | 1  |                    | None                           | 17B      |  |  | X  |  |                                     |  |                                     |  |
|   | Outfall 002        | W   | 500 mL Poly                  | 1  | 4-13-2012<br>17:54 | NaOH                           | 19       |  |  | X  |  |                                     |  |                                     |  |
| COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 002 for this storm event. |                    |   |                              |  |                    |                                |          |  |  |  |  |                                     |  |                                     |  |
| Relinquished By<br><i>Rick Barac</i>  |                    | Date/Time:<br>4-14-2012<br>12:35                                  |                              | Received By<br><i>Janet Campbell</i>               |                    | Date/Time:<br>4-14-12<br>12:35 |          | Turn-around time: (Check)<br>24 Hour: ___ 72 Hour: ___ 10 Day: ___<br>48 Hour: ___ 5 Day: ___ Normal: <input checked="" type="checkbox"/>  |  |  |  |                                     |  |                                     |  |
| Relinquished By<br><i>Janet Campbell</i>  |                    | Date/Time:<br>4-14-12<br>16:15                                    |                              | Received By  |                    | Date/Time:                     |          | Sample Integrity: (Check)<br>Intact: <input checked="" type="checkbox"/> On Ice: <input checked="" type="checkbox"/> 2.1r.   |  |  |  |                                     |  |                                     |  |
| Relinquished By   |                    | Date/Time:  |                              | Received By<br><i>Debbie Wilson</i>                |                    | Date/Time:<br>4-14-12<br>16:15 |          | Data Requirements: (Check)<br>No Level IV: ___ All Level IV: ___ NPDES Level IV: <input checked="" type="checkbox"/>   |  |  |  |                                     |  |                                     |  |

## Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-8624-1

**Login Number: 8624**

**List Number: 1**

**Creator: Kim, Will**

**List Source: TestAmerica Irvine**

| 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    |             |

## 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**

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





## **APPENDIX G**

### **Section 7**

Outfall 008 – April 13, 2012

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





# DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-8620-1

Prepared by

MEC<sup>x</sup>, LP  
12269 East Vassar Drive  
Aurora, CO 80014

## I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES  
 Contract Task Order: 1261.100D.00  
 Sample Delivery Group: 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<br>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**


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

---

### Qualification Code Reference Table

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

**Qualification Code Reference Table Cont.**

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

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### 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<sup>x</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (8/02)*.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
  - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.
  - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.
- Calibration: Calibration criteria were met.
  - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs  $\leq 20\%$  for the 15 native compounds (calibration by isotope dilution) and  $\leq 35\%$  for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.
  - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The 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<sup>X</sup> 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  $\leq 5\%$ , and all masses of interest were calibrated to  $\leq 0.1$  amu and  $\leq 0.9$  amu at 10% peak height.
- Calibration: Calibration criteria were met. Mercury initial calibration  $r^2$  values were  $\geq 0.995$  and all initial and continuing calibration recoveries were within 90-110% for the ICP 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  $\mu\text{g/L}$ ; therefore, dissolved boron detected in the sample was qualified as nondetected, "U." Dissolved arsenic was reported in a bracketing CCB at -7.9  $\mu\text{g/L}$ ; 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 laboratory-established 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<sup>x</sup> 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  $\geq 0.05$  for all target compounds. The initial calibration %RSDs were  $\leq 35\%$ , or  $r^2$  values  $\geq 0.995$ . 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  $\leq 20\%$  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  $\pm 30$  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.
  - 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<sup>X</sup> Data Validation Procedure for Metals (DVP-20, Rev. 0)*, *EPA Method 314.0*, and the *National Functional Guidelines for Inorganic Data Review (10/04)*.

- Holding Times: The analytical holding time, 28 days, was met.
- Calibration: Calibration criteria were met. The initial calibration  $r^2$  value was  $\geq 0.995$  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 method-established 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<sup>X</sup> 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)*.

- 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 laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on 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.

# 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         | J B           | U                    | B                              |
| 1,2,3,4,6,7,8-HpCDF | 67562-39-4 | ND           | 0.000050 | 0.0000001 | ug/L         | J Q B         | U                    | B                              |
| 1,2,3,4,7,8,9-HpCDF | 55673-89-7 | ND           | 0.000050 | 0.0000001 | ug/L         | J Q B         | U                    | B                              |
| 1,2,3,4,7,8-HxCDD   | 39227-28-6 | ND           | 0.000050 | 0.0000000 | ug/L         | J Q B         | U                    | B                              |
| 1,2,3,4,7,8-HxCDF   | 70648-26-9 | ND           | 0.000050 | 0.0000000 | ug/L         | J B           | U                    | B                              |
| 1,2,3,6,7,8-HxCDD   | 57653-85-7 | ND           | 0.000050 | 0.0000000 | ug/L         | J B           | U                    | B                              |
| 1,2,3,6,7,8-HxCDF   | 57117-44-9 | ND           | 0.000050 | 0.0000000 | ug/L         | J Q B         | U                    | B                              |
| 1,2,3,7,8,9-HxCDD   | 19408-74-3 | ND           | 0.000050 | 0.0000000 | ug/L         | J Q B         | U                    | B                              |
| 1,2,3,7,8,9-HxCDF   | 72918-21-9 | ND           | 0.000050 | 0.0000000 | ug/L         | J Q B         | U                    | B                              |
| 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                    | B                              |
| 2,3,4,6,7,8-HxCDF   | 60851-34-5 | ND           | 0.000050 | 0.0000000 | ug/L         | J Q B         | U                    | B                              |
| 2,3,4,7,8-PeCDF     | 57117-31-4 | ND           | 0.000050 | 0.0000004 | ug/L         | J Q B         | U                    | B                              |
| 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         | B             |                      |                                |
| OCDF                | 39001-02-0 | ND           | 0.00010  | 0.0000003 | ug/L         | J B           | U                    | B                              |
| 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                    | B                              |
| 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                    | B                              |
| Total TCDD          | 41903-57-5 | ND           | 0.000010 | 0.0000000 | ug/L         | J B           | U                    | B                              |
| Total TCDF          | 55722-27-5 | 0.000002     | 0.000010 | 0.0000003 | ug/L         | J Q           | J                    | DNQ, *III                      |

*Analysis Method 200.7 Rev 4.4*

**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 |
|----------------------|-----------|--------------|-------|-------|--------------|---------------|----------------------|------------------|
| 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                   | B                |
| 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                    | B                |
| 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                    |                  |

### Analysis Method 200.8

**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 |
|---------------------|-----------|--------------|-----|------|--------------|---------------|----------------------|------------------|
| 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                    |                  |
| Thallium            | 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 Method 245.1

**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 |
|--------------------|-----------|--------------|------|------|--------------|---------------|----------------------|------------------|
| 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 314.0

**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 |
|-------------|------------|--------------|-----|------|--------------|---------------|----------------------|------------------|
| Perchlorate | 14797-73-0 | ND           | 4.0 | 0.95 | ug/L         |               | U                    |                  |

## Analysis Method 625

**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 |
|--------------------------------------|-----------|--------------|-------|--------|--------------|---------------|----------------------|------------------|
| 1,2,4-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                   | C                |
| 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                    |                  |

## Analysis Method 625

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

*Analysis Method*    *Gamma Spec K-40 CS-137*

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 008 composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8693-1            | <b>Sample Date:</b> | 4/13/2012 6:55:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Cesium-137              | 10045973              | 0.091               | 20                   | 4.54                     | pCi/L               | U                    | U                           |                         |
| Potassium-40            | 13966002              | -7.82               | 25                   | 66.2                     | pCi/L               | U                    | U                           |                         |

*Analysis Method*    *Gross Alpha and Beta*

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 008 composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8693-1            | <b>Sample Date:</b> | 4/13/2012 6:55:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Gross Alpha             | 12587461              | 1.32                | 3                    | 1                        | pCi/L               | J                    | J                           | C, DNQ                  |
| Gross Beta              | 12587472              | 5.44                | 4                    | 1.12                     | pCi/L               |                      |                             |                         |

*Analysis Method*    *Radium 226*

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 008 composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8693-1            | <b>Sample Date:</b> | 4/13/2012 6:55:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Radium-226              | 13982633              | 0.234               | 1                    | 0.675                    | pCi/L               | U                    | U                           |                         |

*Analysis Method*    *Radium 228*

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 008 composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8693-1            | <b>Sample Date:</b> | 4/13/2012 6:55:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Radium-228              | 15262201              | 0.699               | 1                    | 0.395                    | pCi/L               | J                    | J                           | DNQ                     |

*Analysis Method*    *SM 2340B*

|                               |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>            | Outfall 008 composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b>       | 440-8693-1            | <b>Sample Date:</b> | 4/13/2012 6:55:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>                | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Hardness, as CaCO3            | STL00009              | 68                  | 0.33                 | 0.17                     | mg/L                |                      |                             |                         |
| Hardness, as CaCO3, Dissolved | STL00009              | 42                  | 0.33                 | 0.17                     | mg/L                |                      |                             |                         |

*Analysis Method SM 2540D*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 008 composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8693-1            | <b>Sample Date:</b> | 4/13/2012 6:55:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Total Suspended Solids  | STL00161              | 200                 | 13                   | 13                       | mg/L                |                      |                             |                         |

---

*Analysis Method Strontium 90*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 008 composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8693-1            | <b>Sample Date:</b> | 4/13/2012 6:55:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Strontium-90            | 10098972              | -0.049              | 2                    | 1.06                     | pCi/L               | U                    | UJ                          | L                       |

---

*Analysis Method Tritium*

---

|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 008 composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8693-1            | <b>Sample Date:</b> | 4/13/2012 6:55:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Tritium                 | 10028178              | -4.64               | 500                  | 153                      | pCi/L               | U                    | U                           |                         |

---

*Analysis Method Uranium, Combined*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 008 composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8693-1            | <b>Sample Date:</b> | 4/13/2012 6:55:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Uranium, Total          |                       | 0.642               | 1                    | 0.018                    | pCi/L               | J                    | J                           | L DNQ                   |

---

# **APPENDIX G**

## **Section 8**

Outfall 008 – April 13, 2012

Test America Analytical Laboratory Reports



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-8620-1

Client Project/Site: Annual Outfall 008 Grab

Revision: 1

For:

MWH Americas Inc

618 Michillinda Avenue, Suite 200

Arcadia, California 91007

Attn: Bronwyn Kelly



Authorized for release by:

6/15/2012 10:24:01 AM

Debby Wilson

Project Manager I

[debby.wilson@testamericainc.com](mailto:debby.wilson@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://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.

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



# Table of Contents

|                                 |     |
|---------------------------------|-----|
| Cover Page . . . . .            | 1   |
| Table of Contents . . . . .     | 3   |
| Sample Summary . . . . .        | 4   |
| Case Narrative . . . . .        | 5   |
| Client Sample Results . . . . . | 7   |
| Chronicle . . . . .             | 15  |
| QC Sample Results . . . . .     | 17  |
| QC Association . . . . .        | 47  |
| Definitions . . . . .           | 54  |
| Certification Summary . . . . . | 56  |
| Subcontract Data . . . . .      | 57  |
| Chain of Custody . . . . .      | 130 |
| Receipt Checklists . . . . .    | 133 |

# 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.

# Case Narrative

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

TestAmerica Job ID: 440-8620-1

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## Job ID: 440-8620-1 (Continued)

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### 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.



# Client Sample Results

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

TestAmerica Job ID: 440-8620-1

**Client Sample ID: Outfall 008**

**Lab Sample ID: 440-8620-1**

**Date Collected: 04/13/12 15:30**

**Matrix: Water**

**Date Received: 04/13/12 18:46**

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

| Analyte                     | Result | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-----------------------------|--------|-----------|------|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane       | ND     |           | 0.50 | 0.30 | ug/L |   |          | 04/17/12 02:31 | 1       |
| 2-Chloroethyl vinyl ether   | ND     |           | 2.0  | 1.8  | ug/L |   |          | 04/15/12 18:06 | 1       |
| 1,1,1,2,2-Tetrachloroethane | ND     |           | 0.50 | 0.30 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Acrolein                    | ND     |           | 5.0  | 4.0  | ug/L |   |          | 04/15/12 18:06 | 1       |
| 1,1,1,2-Trichloroethane     | ND     |           | 0.50 | 0.30 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Acrylonitrile               | ND     |           | 2.0  | 1.2  | ug/L |   |          | 04/15/12 18:06 | 1       |
| 1,1-Dichloroethane          | ND     |           | 0.50 | 0.40 | ug/L |   |          | 04/17/12 02:31 | 1       |
| 1,1-Dichloroethene          | ND     |           | 0.50 | 0.42 | ug/L |   |          | 04/17/12 02:31 | 1       |
| 1,2-Dichlorobenzene         | ND     |           | 0.50 | 0.32 | ug/L |   |          | 04/17/12 02:31 | 1       |
| 1,2-Dichloroethane          | ND     |           | 0.50 | 0.28 | ug/L |   |          | 04/17/12 02:31 | 1       |
| 1,2-Dichloropropane         | ND     |           | 0.50 | 0.35 | ug/L |   |          | 04/17/12 02:31 | 1       |
| 1,3-Dichlorobenzene         | ND     |           | 0.50 | 0.35 | ug/L |   |          | 04/17/12 02:31 | 1       |
| 1,2,3-Trichloropropane      | ND     |           | 0.50 | 0.40 | ug/L |   |          | 04/17/12 02:31 | 1       |
| 1,4-Dichlorobenzene         | ND     |           | 0.50 | 0.37 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Benzene                     | ND     |           | 0.50 | 0.28 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Bromoform                   | ND     |           | 0.50 | 0.40 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Bromomethane                | ND     |           | 0.50 | 0.42 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Carbon tetrachloride        | ND     |           | 0.50 | 0.28 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Chlorobenzene               | ND     |           | 0.50 | 0.36 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Dibromochloromethane        | ND     |           | 0.50 | 0.40 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Chloroethane                | ND     |           | 0.50 | 0.40 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Chloroform                  | ND     |           | 0.50 | 0.33 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Chloromethane               | ND     |           | 0.50 | 0.40 | ug/L |   |          | 04/17/12 02:31 | 1       |
| cis-1,3-Dichloropropene     | ND     |           | 0.50 | 0.22 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Bromodichloromethane        | ND     |           | 0.50 | 0.30 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Ethylbenzene                | ND     |           | 0.50 | 0.25 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Methylene Chloride          | ND     |           | 1.0  | 0.95 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Tetrachloroethene           | ND     |           | 0.50 | 0.32 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Toluene                     | ND     |           | 0.50 | 0.36 | ug/L |   |          | 04/17/12 02:31 | 1       |
| trans-1,2-Dichloroethene    | ND     |           | 0.50 | 0.30 | ug/L |   |          | 04/17/12 02:31 | 1       |
| tert-Butanol                | ND     |           | 10   | 6.5  | ug/L |   |          | 04/17/12 02:31 | 1       |
| trans-1,3-Dichloropropene   | ND     |           | 0.50 | 0.32 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Trichlorofluoromethane      | ND     |           | 0.50 | 0.34 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Vinyl chloride              | ND     |           | 0.50 | 0.40 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Trichloroethene             | ND     |           | 0.50 | 0.26 | ug/L |   |          | 04/17/12 02:31 | 1       |
| cis-1,2-Dichloroethene      | ND     |           | 0.50 | 0.32 | ug/L |   |          | 04/17/12 02:31 | 1       |
| 1,2-Dibromoethane (EDB)     | ND     |           | 0.50 | 0.40 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Diisopropyl ether           | ND     |           | 0.50 | 0.25 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Methyl tert-butyl ether     | ND     |           | 0.50 | 0.32 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Naphthalene                 | ND     |           | 0.50 | 0.41 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Tert-amyl methyl ether      | ND     |           | 0.50 | 0.33 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Ethyl tert-butyl ether      | ND     |           | 0.50 | 0.28 | ug/L |   |          | 04/17/12 02:31 | 1       |
| Xylenes, Total              | ND     |           | 1.0  | 0.90 | ug/L |   |          | 04/17/12 02:31 | 1       |

| 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  
Project/Site: Annual Outfall 008 Grab

TestAmerica Job ID: 440-8620-1

## Client Sample ID: Outfall 008

Lab Sample ID: 440-8620-1

Date Collected: 04/13/12 15:30

Matrix: Water

Date Received: 04/13/12 18:46

### Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

| Analyte              | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Chromium, hexavalent | ND     |           | 1.0 | 0.25 | ug/L |   |          | 04/13/12 22:05 | 1       |

### General Chemistry

| Analyte | Result | Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|-----|-----|------|---|----------------|----------------|---------|
| HEM     | ND     |           | 4.8 | 1.3 | mg/L |   | 04/26/12 07:22 | 04/26/12 07:38 | 1       |

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

| Analyte         | Result | Qualifier | RL  | RL  | Unit      | D | Prepared | Analyzed       | Dil Fac |
|-----------------|--------|-----------|-----|-----|-----------|---|----------|----------------|---------|
| Coliform, Fecal | 500    |           | 2.0 | 2.0 | MPN/100mL |   |          | 04/13/12 18:57 | 1       |

### 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 Received: 04/13/12 18:46

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

| Analyte                   | Result | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|------|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 0.50 | 0.30 | ug/L |   |          | 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 Sample Results

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

TestAmerica Job ID: 440-8620-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 440-8620-2**

**Date Collected: 04/13/12 15:30**

**Matrix: Water**

**Date Received: 04/13/12 18:46**

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

| 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              |
| <b>Surrogate</b>            | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |      |      |   | <b>Prepared</b> | <b>Analyzed</b> | <b>Dil Fac</b> |
| 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**

**Lab Sample ID: 440-8693-1**

**Date Collected: 04/13/12 18:55**

**Matrix: Water**

**Date Received: 04/14/12 16:15**

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

| 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              |
| <b>Surrogate</b>            | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |       |      |   | <b>Prepared</b> | <b>Analyzed</b> | <b>Dil Fac</b> |
| 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              |
| Triphenylphosphate          | 130              |                  | 70 - 130      |       |      |   | 04/15/12 06:21  | 04/19/12 13:37  | 1              |

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

| 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       |
| <b>Bis(2-ethylhexyl) phthalate</b> | <b>1.87</b> | <b>J,DX</b> | 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

**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**

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

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

**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

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

| 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              |
| <b>Surrogate</b>              | <b>%Recovery</b> | <b>Qualifier</b> | <b>Limits</b> |        |      |   | <b>Prepared</b> | <b>Analyzed</b> | <b>Dil Fac</b> |
| 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 Chromatography**

| 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       |

**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       |

**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 | 0.00000067 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>Total TCDD</b>          | <b>0.0000026</b> | <b>J B</b>   | 0.000010 | 0.00000070 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>1,2,3,7,8-PeCDD</b>     | <b>0.0000012</b> | <b>J Q</b>   | 0.000050 | 0.00000065 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>Total PeCDD</b>         | <b>0.0000012</b> | <b>J Q</b>   | 0.000050 | 0.00000065 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>1,2,3,4,7,8-HxCDD</b>   | <b>0.0000015</b> | <b>J Q B</b> | 0.000050 | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>1,2,3,6,7,8-HxCDD</b>   | <b>0.0000026</b> | <b>J B</b>   | 0.000050 | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>1,2,3,7,8,9-HxCDD</b>   | <b>0.0000028</b> | <b>J Q B</b> | 0.000050 | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>Total HxCDD</b>         | <b>0.000015</b>  | <b>J Q B</b> | 0.000050 | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>1,2,3,4,6,7,8-HpCDD</b> | <b>0.000047</b>  | <b>J B</b>   | 0.000050 | 0.00000046 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>Total HpCDD</b>         | <b>0.00011</b>   | <b>J B</b>   | 0.000050 | 0.00000046 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>OCDD</b>                | <b>0.00052</b>   | <b>B</b>     | 0.00010  | 0.0000016  | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>2,3,7,8-TCDF</b>        | <b>0.0000013</b> | <b>J Q</b>   | 0.000010 | 0.00000039 | 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    |
| <b>Total TCDF</b>          | <b>0.0000025</b> | <b>J Q</b>   | 0.000010 | 0.00000039 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>1,2,3,7,8-PeCDF</b>     | <b>0.0000034</b> | <b>J Q B</b> | 0.000050 | 0.00000046 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>2,3,4,7,8-PeCDF</b>     | <b>0.0000018</b> | <b>J Q B</b> | 0.000050 | 0.00000049 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>Total PeCDF</b>         | <b>0.0000088</b> | <b>J Q B</b> | 0.000050 | 0.00000047 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>1,2,3,4,7,8-HxCDF</b>   | <b>0.0000083</b> | <b>J B</b>   | 0.000050 | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>1,2,3,6,7,8-HxCDF</b>   | <b>0.0000023</b> | <b>J Q B</b> | 0.000050 | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>2,3,4,6,7,8-HxCDF</b>   | <b>0.0000014</b> | <b>J Q B</b> | 0.000050 | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>1,2,3,7,8,9-HxCDF</b>   | <b>0.0000016</b> | <b>J Q B</b> | 0.000050 | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>Total HxCDF</b>         | <b>0.000030</b>  | <b>J Q B</b> | 0.000050 | 0.00000040 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>1,2,3,4,6,7,8-HpCDF</b> | <b>0.000018</b>  | <b>J Q B</b> | 0.000050 | 0.00000013 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>1,2,3,4,7,8,9-HpCDF</b> | <b>0.0000049</b> | <b>J Q B</b> | 0.000050 | 0.00000016 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>Total HpCDF</b>         | <b>0.000036</b>  | <b>J Q B</b> | 0.000050 | 0.00000015 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| <b>OCDF</b>                | <b>0.000023</b>  | <b>J B</b>   | 0.00010  | 0.00000032 | ug/L |   | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |

# Client Sample Results

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

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

Date Received: 04/14/12 16:15

| Surrogate               | %Recovery | Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|-------------------------|-----------|-----------|----------|----------------|----------------|---------|
| 37Cl4-2,3,7,8-TCDD      | 83        |           | 35 - 197 | 04/23/12 09:00 | 04/24/12 22:57 | 0.96    |
| 37Cl4-2,3,7,8-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    |

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

| 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       |

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

| 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       |

# Client Sample Results

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

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

Date Received: 04/14/12 16:15

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

| Analyte       | Result    | Qualifier | RL  | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------------|-----------|-----------|-----|------|------|---|----------------|----------------|---------|
| Cadmium       | ND        |           | 5.0 | 0.50 | ug/L |   | 04/23/12 17:06 | 04/28/12 19:14 | 5       |
| <b>Copper</b> | <b>18</b> |           | 10  | 2.5  | ug/L |   | 04/23/12 17:06 | 04/28/12 19:14 | 5       |
| <b>Lead</b>   | <b>10</b> |           | 5.0 | 1.0  | ug/L |   | 04/23/12 17:06 | 04/28/12 19:14 | 5       |
| Antimony      | ND        |           | 10  | 1.5  | ug/L |   | 04/23/12 17:06 | 04/28/12 19:14 | 5       |
| Selenium      | ND        |           | 10  | 2.5  | ug/L |   | 04/23/12 17:06 | 04/28/12 19:14 | 5       |
| Thallium      | ND        |           | 5.0 | 1.0  | ug/L |   | 04/23/12 17:06 | 04/28/12 19:14 | 5       |

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

| Analyte         | Result     | 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 | 5       |
| <b>Copper</b>   | <b>3.6</b> | <b>J,DX</b> | 10  | 2.5  | ug/L |   | 04/23/12 20:10 | 04/27/12 18:56 | 5       |
| Lead            | ND         |             | 5.0 | 1.0  | ug/L |   | 04/23/12 20:10 | 04/27/12 01:01 | 5       |
| Antimony        | ND         |             | 10  | 1.5  | ug/L |   | 04/23/12 20:10 | 04/27/12 01:01 | 5       |
| Selenium        | ND         |             | 10  | 2.5  | ug/L |   | 04/23/12 20:10 | 04/27/12 01:01 | 5       |
| <b>Thallium</b> | <b>1.2</b> | <b>J,DX</b> | 5.0 | 1.0  | ug/L |   | 04/23/12 20:10 | 04/27/12 18:56 | 5       |

**Method: 245.1 - Mercury (CVAA)**

| Analyte | Result | Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|------|------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.20 | 0.10 | ug/L |   | 04/16/12 15:03 | 04/17/12 12:52 | 1       |

**Method: 245.1 - Mercury (CVAA) - Dissolved**

| Analyte | Result | Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|------|------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.20 | 0.10 | ug/L |   | 04/17/12 08:33 | 04/18/12 13:16 | 1       |

**Method: SM 2340B - Total Hardness (as CaCO3) by calculation**

| Analyte                   | Result    | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|-----------|-----------|------|------|------|---|----------|----------------|---------|
| <b>Hardness, as CaCO3</b> | <b>68</b> |           | 0.33 | 0.17 | mg/L |   |          | 04/18/12 13:18 | 1       |

**Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved**

| Analyte                   | Result    | Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|-----------|-----------|------|------|------|---|----------|----------------|---------|
| <b>Hardness, as CaCO3</b> | <b>42</b> |           | 0.33 | 0.17 | mg/L |   |          | 05/01/12 14:55 | 1       |

**General Chemistry**

| Analyte                       | Result      | Qualifier | RL    | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------------|-------------|-----------|-------|-------|------|---|----------------|----------------|---------|
| <b>Total Dissolved Solids</b> | <b>110</b>  |           | 10    | 10    | mg/L |   |                | 04/16/12 10:21 | 1       |
| <b>Total Suspended Solids</b> | <b>200</b>  |           | 13    | 13    | mg/L |   |                | 04/19/12 17:19 | 1       |
| Cyanide, Total                | ND          |           | 5.0   | 3.0   | ug/L |   | 04/26/12 18:24 | 04/26/12 21:26 | 1       |
| <b>Fluoride</b>               | <b>0.10</b> |           | 0.10  | 0.020 | mg/L |   |                | 04/18/12 06:40 | 1       |
| Ammonia (as N)                | ND          |           | 0.400 | 0.157 | mg/L |   | 04/26/12 19:26 | 04/26/12 21:20 | 1       |

**Method: Asbestos - EPA 100.2 Asbestos in Drinking Water**

| Analyte  | Result | Qualifier | RL | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------|--------|-----------|----|-----|------|---|----------------|----------------|---------|
| ASBESTOS | <6.8   |           |    |     | MFL  |   | 04/17/12 00:00 | 04/23/12 00:00 | 1       |

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

| Analyte      | Result | Qualifier | RL | MDL | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|--------------|--------|-----------|----|-----|-------|---|----------------|----------------|---------|
| Cesium-137   | 0.091  | U         | 20 |     | pCi/L |   | 04/26/12 00:00 | 04/26/12 00:00 | 1       |
| Potassium-40 | -7.82  | U         | 25 |     | pCi/L |   | 04/26/12 00:00 | 04/26/12 00:00 | 1       |

**Method: Gross Alpha and Beta - Gross Alpha/Beta**

| Analyte     | Result | Qualifier | RL | MDL | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|-------------|--------|-----------|----|-----|-------|---|----------------|----------------|---------|
| Gross Alpha | 1.32   | J         | 3  |     | pCi/L |   | 04/26/12 00:00 | 04/30/12 08:20 | 1       |
| Gross Beta  | 5.44   |           | 4  |     | pCi/L |   | 04/26/12 00:00 | 04/30/12 08:20 | 1       |

# Client Sample Results

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

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**

**Date Received: 04/14/12 16:15**

**Method: Radium 226 - General Sub Contract Method**

| 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 - RAD-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 - General Sub Contract Method**

| Analyte      | Result | Qualifier | RL | MDL | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|--------------|--------|-----------|----|-----|-------|---|----------------|----------------|---------|
| Strontium-90 | -0.049 | U         | 2  |     | pCi/L |   | 04/26/12 00:00 | 04/26/12 12:35 | 1       |

**Method: Tritium - General Sub Contract Method**

| 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, Combined - General Sub Contract Method**

| Analyte        | Result | Qualifier | RL | MDL | Unit  | D | Prepared       | Analyzed       | Dil Fac |
|----------------|--------|-----------|----|-----|-------|---|----------------|----------------|---------|
| Uranium, Total | 0.642  | J         | 1  |     | pCi/L |   | 04/27/12 00:00 | 04/27/12 08:55 | 1       |

# Lab Chronicle

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

TestAmerica Job ID: 440-8620-1

## 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

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed                           | Analyst | Lab     |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|--|---------|---------|
| Total/NA  | Analysis   | 624          |     | 1          | 10 mL          | 10 mL        | 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        | (Start) 04/13/12 18:57<br>(End) 04/16/12 14:15 | AK      | TAL IRV |
| Total/NA  | Analysis   | SM 9221F     |     | 1          | 100 mL         | 100 mL       | 20003        | (Start) 04/13/12 18:57<br>(End) 04/16/12 14:15 | AK      | TAL IRV |

## Client Sample ID: Trip Blank

Date Collected: 04/13/12 15:30

Date Received: 04/13/12 18:46

## Lab Sample ID: 440-8620-2

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 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

Date Collected: 04/13/12 18:55

Date Received: 04/14/12 16:15

## Lab Sample ID: 440-8693-1

Matrix: Water

| Prep Type         | Batch Type | Batch Method  | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-------------------|------------|---------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA          | 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       | AI      | 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 WSC |
| Total             | Analysis   | 1613B         |     | 0.96       |                |              | 2114077      | 04/24/12 22:57       | GSV     | TAL WSC |
| Total             | Analysis   | 1613B         |     | 0.96       |                |              | 2114077      | 04/25/12 05:30       | GSV     | TAL WSC |
| 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 |

# Lab Chronicle

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

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**

**Date Received: 04/14/12 16:15**

| Prep Type         | Batch Type | Batch Method           | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab       |
|-------------------|------------|------------------------|-----|------------|----------------|--------------|--------------|----------------------|---------|-----------|
| Dissolved         | Prep       | 200.2                  |     |            | 50 mL          | 50 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        |     | 1          |                |              | 8611         | 04/26/12 00:00       | LS      | Eber-Rich |
| Total/NA          | Prep       | CS-137<br>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

# 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)

**Lab Sample ID: MB 440-19861/4**

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

| Analyte                   | MB Result | MB Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|-----------|--------------|-----|-----|------|---|----------|----------------|---------|
| 2-Chloroethyl vinyl ether | ND        |              | 2.0 | 1.8 | ug/L |   |          | 04/15/12 14:54 | 1       |
| Acrolein                  | ND        |              | 5.0 | 4.0 | ug/L |   |          | 04/15/12 14:54 | 1       |
| Acrylonitrile             | ND        |              | 2.0 | 1.2 | ug/L |   |          | 04/15/12 14:54 | 1       |

| Surrogate                   | MB %Recovery | MB 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**

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

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

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

**Lab Sample ID: LCS 440-19861/6**

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

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

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

**Lab Sample ID: 440-7721-A-1 MS**

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

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

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

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

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

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

# 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: 440-7721-A-1 MSD**

**Matrix: Water**

**Analysis Batch: 19861**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

| <i>Surrogate</i>                   | <i>%Recovery</i> | <i>MSD<br/>Qualifier</i> | <i>MSD<br/>Limits</i> |
|------------------------------------|------------------|--------------------------|-----------------------|
| <i>Toluene-d8 (Surr)</i>           | 105              |                          | 80 - 120              |
| <i>Dibromofluoromethane (Surr)</i> | 102              |                          | 80 - 120              |

**Lab Sample ID: MB 440-20084/4**

**Matrix: Water**

**Analysis Batch: 20084**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

| <i>Analyte</i>            | <i>MB<br/>Result</i> | <i>MB<br/>Qualifier</i> | <i>RL</i> | <i>MDL</i> | <i>Unit</i> | <i>D</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|---------------------------|----------------------|-------------------------|-----------|------------|-------------|----------|-----------------|-----------------|----------------|
| 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              |

# 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**

**Matrix: Water**

**Analysis Batch: 20084**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

| Surrogate                   | MB MB     |           | Limits   | Prepared | Analyzed       | Dil Fac |
|-----------------------------|-----------|-----------|----------|----------|----------------|---------|
|                             | %Recovery | Qualifier |          |          |                |         |
| 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       |

**Lab Sample ID: LCS 440-20084/5**

**Matrix: Water**

**Analysis Batch: 20084**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

| Analyte                   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec.    |
|---------------------------|-------------|------------|---------------|------|---|------|----------|
|                           |             |            |               |      |   |      | Limits   |
| 1,1,1-Trichloroethane     | 25.0        | 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 |

# 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: LCS 440-20084/5**

**Matrix: Water**

**Analysis Batch: 20084**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

| Surrogate                   | LCS LCS   |           | Limits   |
|-----------------------------|-----------|-----------|----------|
|                             | %Recovery | Qualifier |          |
| 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**

| Analyte                   | Sample | Sample    | Spike | MS MS  |           | Unit | D | %Rec | %Rec.    |
|---------------------------|--------|-----------|-------|--------|-----------|------|---|------|----------|
|                           | Result | Qualifier |       | Result | Qualifier |      |   |      |          |
| 1,1,1-Trichloroethane     | ND     |           | 25.0  | 26.1   |           | ug/L |   | 104  | 65 - 140 |
| 1,1,1,2-Tetrachloroethane | ND     |           | 25.0  | 28.6   |           | ug/L |   | 114  | 55 - 135 |
| 1,1,1,2-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**

| Surrogate                   | MS MS     |           | Limits   |
|-----------------------------|-----------|-----------|----------|
|                             | %Recovery | Qualifier |          |
| 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**

| Analyte                   | Sample | Sample    | Spike | MSD MSD |           | Unit | D | %Rec | %Rec.    |       | RPD | Limit |
|---------------------------|--------|-----------|-------|---------|-----------|------|---|------|----------|-------|-----|-------|
|                           | Result | Qualifier |       | Result  | Qualifier |      |   |      | Limits   | RPD   |     |       |
| 1,1,1-Trichloroethane     | ND     |           | 25.0  | 24.9    |           | ug/L |   | 100  | 65 - 140 | 4.71  | 20  |       |
| 1,1,1,2-Tetrachloroethane | ND     |           | 25.0  | 28.3    |           | ug/L |   | 113  | 55 - 135 | 1.05  | 30  |       |
| 1,1,1,2-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  |       |
| 1,2-Dichloroethane        | 0.61   |           | 25.0  | 26.7    |           | ug/L |   | 104  | 60 - 140 | 7.91  | 20  |       |
| 1,2-Dichloropropane       | ND     |           | 25.0  | 25.1    |           | ug/L |   | 100  | 65 - 130 | 7.66  | 20  |       |
| 1,3-Dichlorobenzene       | ND     |           | 25.0  | 27.1    |           | ug/L |   | 108  | 75 - 125 | 1.83  | 20  |       |
| 1,2,3-Trichloropropane    | ND     |           | 25.0  | 25.7    |           | ug/L |   | 103  | 55 - 135 | 1.00  | 30  |       |
| 1,4-Dichlorobenzene       | ND     |           | 25.0  | 25.7    |           | ug/L |   | 103  | 75 - 125 | 3.82  | 20  |       |
| Benzene                   | ND     |           | 25.0  | 22.8    |           | ug/L |   | 91   | 65 - 125 | 6.37  | 20  |       |
| Bromoform                 | ND     |           | 25.0  | 21.6    |           | ug/L |   | 86   | 55 - 135 | 5.23  | 25  |       |
| Bromomethane              | ND     |           | 25.0  | 28.2    |           | ug/L |   | 113  | 55 - 145 | 6.19  | 25  |       |
| Carbon tetrachloride      | 0.30   | J,DX      | 25.0  | 28.2    |           | ug/L |   | 112  | 65 - 140 | 7.18  | 25  |       |
| Chlorobenzene             | ND     |           | 25.0  | 23.7    |           | ug/L |   | 95   | 75 - 125 | 2.13  | 20  |       |
| Dibromochloromethane      | ND     |           | 25.0  | 28.3    |           | ug/L |   | 113  | 65 - 140 | 2.14  | 25  |       |
| Chloroethane              | ND     |           | 25.0  | 23.4    |           | ug/L |   | 94   | 55 - 140 | 5.41  | 25  |       |
| Chloroform                | 0.99   |           | 25.0  | 24.4    |           | ug/L |   | 94   | 65 - 135 | 7.11  | 20  |       |
| Chloromethane             | ND     |           | 25.0  | 26.8    |           | ug/L |   | 107  | 45 - 145 | 4.02  | 25  |       |
| cis-1,3-Dichloropropene   | ND     |           | 25.0  | 24.3    |           | ug/L |   | 97   | 70 - 130 | 4.82  | 20  |       |
| Bromodichloromethane      | ND     |           | 25.0  | 25.9    |           | ug/L |   | 104  | 70 - 135 | 5.63  | 20  |       |
| Ethylbenzene              | ND     |           | 25.0  | 21.8    |           | ug/L |   | 87   | 65 - 130 | 3.26  | 20  |       |
| Methylene Chloride        | ND     |           | 25.0  | 21.5    |           | ug/L |   | 86   | 50 - 135 | 5.43  | 20  |       |
| Tetrachloroethene         | 0.33   | J,DX      | 25.0  | 27.5    |           | ug/L |   | 109  | 65 - 130 | 1.83  | 20  |       |
| Toluene                   | ND     |           | 25.0  | 22.0    |           | ug/L |   | 88   | 70 - 125 | 7.44  | 20  |       |
| trans-1,2-Dichloroethene  | ND     |           | 25.0  | 24.4    |           | ug/L |   | 98   | 65 - 130 | 5.96  | 20  |       |
| tert-Butanol              | ND     |           | 125   | 137     |           | ug/L |   | 110  | 65 - 140 | 4.36  | 25  |       |
| trans-1,3-Dichloropropene | ND     |           | 25.0  | 25.4    |           | ug/L |   | 102  | 65 - 135 | 8.66  | 25  |       |
| Trichlorofluoromethane    | ND     |           | 25.0  | 25.4    |           | ug/L |   | 102  | 60 - 145 | 6.48  | 25  |       |
| Vinyl chloride            | ND     |           | 25.0  | 27.0    |           | ug/L |   | 108  | 45 - 140 | 3.64  | 30  |       |
| Trichloroethene           | 29     |           | 25.0  | 53.3    |           | ug/L |   | 99   | 65 - 125 | 5.30  | 20  |       |
| cis-1,2-Dichloroethene    | ND     |           | 25.0  | 25.6    |           | ug/L |   | 102  | 65 - 130 | 3.45  | 20  |       |
| 1,2-Dibromoethane (EDB)   | ND     |           | 25.0  | 26.4    |           | ug/L |   | 106  | 70 - 130 | 0.000 | 25  |       |
| Diisopropyl ether         | ND     |           | 25.0  | 24.3    |           | ug/L |   | 97   | 60 - 140 | 5.21  | 25  |       |
| Methyl tert-butyl ether   | ND     |           | 25.0  | 23.1    |           | ug/L |   | 92   | 55 - 145 | 3.82  | 25  |       |
| Naphthalene               | ND     |           | 25.0  | 25.4    |           | ug/L |   | 102  | 50 - 140 | 7.94  | 30  |       |
| Tert-amyl methyl ether    | ND     |           | 25.0  | 21.7    |           | ug/L |   | 87   | 60 - 140 | 1.37  | 30  |       |
| Ethyl tert-butyl ether    | ND     |           | 25.0  | 22.3    |           | ug/L |   | 89   | 60 - 135 | 6.09  | 25  |       |
| Xylenes, Total            | ND     |           | 75.0  | 69.3    |           | ug/L |   | 92   | 60 - 130 | 2.04  | 20  |       |

# 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 MSD**  
**Matrix: Water**  
**Analysis Batch: 20084**

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

| Surrogate                   | MSD       |           | Limits   |
|-----------------------------|-----------|-----------|----------|
|                             | %Recovery | Qualifier |          |
| 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**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 19844**

| Analyte      | MB     |           | RL   | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------|--------|-----------|------|-------|------|---|----------------|----------------|---------|
|              | Result | Qualifier |      |       |      |   |                |                |         |
| Chlorpyrifos | ND     |           | 1.0  | 0.080 | ug/L |   | 04/15/12 06:18 | 04/19/12 09:02 | 1       |
| Diazinon     | ND     |           | 0.25 | 0.040 | ug/L |   | 04/15/12 06:18 | 04/19/12 09:02 | 1       |

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

**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**

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

| Surrogate                   | LCS       |           | Limits   |
|-----------------------------|-----------|-----------|----------|
|                             | %Recovery | Qualifier |          |
| 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**

| Analyte      | Spike Added | LCSD   |           | Unit | D | %Rec | %Rec.    |     | RPD   |  |
|--------------|-------------|--------|-----------|------|---|------|----------|-----|-------|--|
|              |             | Result | Qualifier |      |   |      | Limits   | RPD | Limit |  |
| Chlorpyrifos | 5.00        | 5.89   |           | ug/L |   | 118  | 70 - 130 | 7   | 30    |  |
| Diazinon     | 5.00        | 4.91   |           | ug/L |   | 98   | 70 - 130 | 7   | 30    |  |

| Surrogate                   | LCSD      |           | Limits   |
|-----------------------------|-----------|-----------|----------|
|                             | %Recovery | Qualifier |          |
| 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 | MB Qualifier | RL    | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|--------------------------------------|-----------|--------------|-------|-------|------|---|----------------|----------------|---------|
| Acenaphthene                         | ND        |              | 0.500 | 0.200 | ug/L |   | 04/20/12 14:44 | 04/22/12 17:08 | 1       |
| Acenaphthylene                       | ND        |              | 0.500 | 0.200 | ug/L |   | 04/20/12 14:44 | 04/22/12 17:08 | 1       |
| Aniline                              | ND        |              | 10.0  | 0.300 | ug/L |   | 04/20/12 14:44 | 04/22/12 17:08 | 1       |
| Anthracene                           | ND        |              | 0.500 | 0.100 | ug/L |   | 04/20/12 14:44 | 04/22/12 17:08 | 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  | 0.100 | ug/L |   | 04/20/12 14:44 | 04/22/12 17:08 | 1       |
| Benzo[b]fluoranthene                 | ND        |              | 2.00  | 0.100 | 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 | 1       |
| 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 | 0.100 | ug/L |   | 04/20/12 14:44 | 04/22/12 17:08 | 1       |
| 2-Chlorophenol                       | ND        |              | 1.00  | 0.200 | 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 Azobenzene) | ND        |              | 1.00  | 0.200 | ug/L |   | 04/20/12 14:44 | 04/22/12 17:08 | 1       |
| 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       |

# 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) (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**

| Analyte                       | MB     | MB        | RL    | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------------|--------|-----------|-------|-------|------|---|----------------|----------------|---------|
|                               | Result | Qualifier |       |       |      |   |                |                |         |
| 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       |

| Surrogate            | MB        | MB        | Limits   | Prepared       | Analyzed       | Dil Fac |
|----------------------|-----------|-----------|----------|----------------|----------------|---------|
|                      | %Recovery | Qualifier |          |                |                |         |
| 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**

| Analyte                     | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec. Limits |
|-----------------------------|-------------|--------|-----------|------|---|------|--------------|
|                             |             | Result | Qualifier |      |   |      |              |
| 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     |

# 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) (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**

| Analyte                              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %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 Azobenzene) | 10.0        | 10.58      |               | ug/L |   | 106  | 60 - 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      |               | ug/L |   | 86   | 50 - 120     |
| 4-Chloroaniline                      | 10.0        | 9.520      |               | ug/L |   | 95   | 55 - 120     |
| 2-Methylnaphthalene                  | 10.0        | 9.160      |               | ug/L |   | 92   | 55 - 120     |
| 2-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     |

# 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) (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**

| Analyte                       | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------------------|-------------|------------|---------------|------|---|------|--------------|
| Benzo[g,h,i]perylene          | 10.0        | 9.260      |               | ug/L |   | 93   | 45 - 135     |
| Benzyl alcohol                | 10.0        | 9.860      |               | ug/L |   | 99   | 50 - 120     |
| bis (2-chloroisopropyl) ether | 10.0        | 9.200      |               | ug/L |   | 92   | 45 - 120     |

| Surrogate            | LCS %Recovery | LCS 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**

**Analysis Batch: 21217**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 21041**

| Analyte                     | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %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        | 3.675     | J,DX LN      | ug/L |   | 39   | 40 - 120     |

# 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) (Continued)

Lab Sample ID: 440-8891-A-1-A MS

Matrix: Water

Analysis Batch: 21217

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 21041

| Analyte                              | Sample | Sample    | Spike | MS     | MS        | Unit | D | %Rec | %Rec.<br>Limits |
|--------------------------------------|--------|-----------|-------|--------|-----------|------|---|------|-----------------|
|                                      | Result | Qualifier | Added | Result | Qualifier |      |   |      |                 |
| 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 Azobenzene) | ND     |           | 9.48  | 10.16  |           | ug/L |   | 107  | 60 - 120        |
| 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        |
| Hexachloroethane                     | ND     |           | 9.48  | 6.132  | J,DX      | ug/L |   | 65   | 35 - 120        |
| Hexachlorocyclopentadiene            | ND     |           | 9.48  | 2.630  | J,DX      | ug/L |   | 28   | 25 - 120        |
| Indeno[1,2,3-cd]pyrene               | ND     |           | 9.48  | 10.62  |           | ug/L |   | 112  | 40 - 135        |
| Isophorone                           | ND     |           | 9.48  | 11.68  | AY        | ug/L |   | 123  | 50 - 120        |
| 4-Methylphenol                       | ND     |           | 9.48  | 9.403  | J,DX      | ug/L |   | 99   | 50 - 120        |
| Naphthalene                          | ND     |           | 9.48  | 7.886  |           | ug/L |   | 83   | 55 - 120        |
| Nitrobenzene                         | ND     |           | 9.48  | 10.09  |           | ug/L |   | 106  | 55 - 120        |
| 2-Nitrophenol                        | ND     |           | 9.48  | 8.417  |           | ug/L |   | 89   | 50 - 120        |
| 4-Nitrophenol                        | ND     | LQ        | 9.48  | 16.61  | J,DX      | ug/L |   | NC   | 45 - 120        |
| N-Nitrosodimethylamine               | ND     |           | 9.48  | 6.781  | J,DX      | ug/L |   | 72   | 45 - 120        |
| N-Nitrosodiphenylamine               | ND     |           | 9.48  | 9.327  |           | ug/L |   | 98   | 60 - 120        |
| N-Nitrosodi-n-propylamine            | ND     |           | 9.48  | 9.782  |           | ug/L |   | 103  | 45 - 120        |
| Pentachlorophenol                    | ND     |           | 9.48  | 7.886  |           | ug/L |   | 83   | 24 - 121        |
| Phenanthrene                         | ND     |           | 9.48  | 8.569  |           | ug/L |   | 90   | 65 - 120        |
| Phenol                               | 1.16   | J,DX      | 9.48  | 9.782  |           | ug/L |   | 91   | 40 - 120        |
| Pyrene                               | ND     |           | 9.48  | 11.53  |           | ug/L |   | 122  | 55 - 125        |
| 1,2,4-Trichlorobenzene               | ND     |           | 9.48  | 6.791  |           | ug/L |   | 72   | 45 - 120        |
| 2,4,6-Trichlorophenol                | ND     |           | 9.48  | 9.782  |           | ug/L |   | 103  | 55 - 120        |
| 2-Methylphenol                       | ND     |           | 9.48  | 8.872  |           | ug/L |   | 94   | 50 - 120        |
| 4-Chloroaniline                      | ND     |           | 9.48  | 4.712  | J,DX LN   | ug/L |   | 50   | 55 - 120        |
| 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 - 120        |
| Dibenzofuran                         | ND     |           | 9.48  | 8.417  |           | ug/L |   | 89   | 65 - 120        |
| 4-Nitroaniline                       | ND     |           | 9.48  | 4.363  | J,DX LN   | ug/L |   | 46   | 55 - 125        |
| Benzo[g,h,i]perylene                 | ND     |           | 9.48  | 10.46  | J,DX      | ug/L |   | 110  | 45 - 135        |
| Benzyl alcohol                       | ND     |           | 9.48  | 9.479  | J,DX      | ug/L |   | 100  | 40 - 120        |
| bis (2-chloroisopropyl) ether        | ND     |           | 9.48  | 8.872  |           | ug/L |   | 94   | 45 - 120        |

| Surrogate            | MS        | MS        | Limits   |
|----------------------|-----------|-----------|----------|
|                      | %Recovery | Qualifier |          |
| 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 |

# 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) (Continued)

**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**

| Analyte                              | Sample | Sample Qualifier | Spike Added | MSD    | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|--------------------------------------|--------|------------------|-------------|--------|---------------|------|---|------|--------------|-----|-----------|
|                                      | Result |                  |             | Result |               |      |   |      |              |     |           |
| Acenaphthene                         | ND     |                  | 9.52        | 8.762  |               | ug/L |   | 92   | 60 - 120     | 2   | 25        |
| Acenaphthylene                       | ND     |                  | 9.52        | 9.981  |               | ug/L |   | 105  | 60 - 120     | 1   | 25        |
| Aniline                              | ND     |                  | 9.52        | 5.803  | J,DX          | ug/L |   | 61   | 35 - 120     | 5   | 30        |
| Anthracene                           | ND     |                  | 9.52        | 9.371  |               | ug/L |   | 98   | 65 - 120     | 5   | 25        |
| Benzidine                            | ND     |                  | 9.52        | ND     | AY            | ug/L |   | 0    | 30 - 160     | NC  | 35        |
| Benzo[a]anthracene                   | ND     |                  | 9.52        | 9.981  | J,DX          | ug/L |   | 105  | 65 - 120     | 9   | 20        |
| Benzo[b]fluoranthene                 | ND     |                  | 9.52        | 9.752  |               | ug/L |   | 102  | 55 - 125     | 4   | 25        |
| Benzo[k]fluoranthene                 | ND     |                  | 9.52        | 8.686  |               | ug/L |   | 91   | 55 - 125     | 8   | 30        |
| Benzoic acid                         | ND     |                  | 9.52        | 19.73  | J,DX          | ug/L |   | NC   | 25 - 125     | 1   | 30        |
| Benzo[a]pyrene                       | ND     |                  | 9.52        | 9.219  |               | ug/L |   | 97   | 55 - 130     | 4   | 25        |
| Bis(2-chloroethoxy)methane           | ND     |                  | 9.52        | 8.914  |               | ug/L |   | 94   | 50 - 120     | 5   | 25        |
| Bis(2-chloroethyl)ether              | ND     |                  | 9.52        | 8.152  |               | ug/L |   | 86   | 50 - 120     | 3   | 25        |
| Bis(2-ethylhexyl) phthalate          | ND     |                  | 9.52        | 14.32  | J,DX LM       | ug/L |   | 150  | 65 - 130     | 6   | 25        |
| 4-Bromophenyl phenyl ether           | ND     |                  | 9.52        | 9.600  |               | ug/L |   | 101  | 60 - 120     | 12  | 25        |
| Butyl benzyl phthalate               | ND     |                  | 9.52        | 11.81  | J,DX          | ug/L |   | 124  | 55 - 130     | 7   | 25        |
| 4-Chloro-3-methylphenol              | ND     |                  | 9.52        | 11.43  |               | ug/L |   | 120  | 60 - 120     | 2   | 25        |
| 2-Chloronaphthalene                  | ND     |                  | 9.52        | 8.686  |               | ug/L |   | 91   | 60 - 120     | 2   | 20        |
| 2-Chlorophenol                       | ND     |                  | 9.52        | 8.381  |               | ug/L |   | 88   | 45 - 120     | 0   | 25        |
| 4-Chlorophenyl phenyl ether          | ND     |                  | 9.52        | 7.771  |               | ug/L |   | 82   | 65 - 120     | 0   | 25        |
| Chrysene                             | ND     |                  | 9.52        | 8.990  |               | ug/L |   | 94   | 65 - 120     | 9   | 25        |
| Dibenz(a,h)anthracene                | ND     |                  | 9.52        | 10.21  |               | ug/L |   | 107  | 45 - 135     | 2   | 30        |
| Di-n-butyl phthalate                 | ND     |                  | 9.52        | 13.03  | LM            | ug/L |   | 137  | 60 - 125     | 8   | 25        |
| 1,2-Dichlorobenzene                  | ND     |                  | 9.52        | 6.934  |               | ug/L |   | 73   | 40 - 120     | 0   | 25        |
| 1,3-Dichlorobenzene                  | ND     |                  | 9.52        | 6.329  |               | ug/L |   | 66   | 35 - 120     | 2   | 25        |
| 1,4-Dichlorobenzene                  | ND     |                  | 9.52        | 6.346  |               | ug/L |   | 67   | 35 - 120     | 1   | 25        |
| 3,3'-Dichlorobenzidine               | ND     |                  | 9.52        | ND     | AY            | ug/L |   | 0    | 45 - 135     | NC  | 25        |
| 2,4-Dichlorophenol                   | ND     |                  | 9.52        | 9.143  |               | ug/L |   | 96   | 55 - 120     | 2   | 25        |
| Diethyl phthalate                    | ND     |                  | 9.52        | 8.762  |               | ug/L |   | 92   | 55 - 120     | 0   | 30        |
| 2,4-Dimethylphenol                   | ND     |                  | 9.52        | 9.829  |               | ug/L |   | 103  | 40 - 120     | 9   | 25        |
| Dimethyl phthalate                   | ND     |                  | 9.52        | 8.381  |               | ug/L |   | 88   | 30 - 120     | 7   | 30        |
| 4,6-Dinitro-2-methylphenol           | ND     |                  | 9.52        | 9.676  | J,DX          | ug/L |   | 102  | 45 - 120     | 15  | 25        |
| 2,4-Dinitrophenol                    | ND     |                  | 9.52        | ND     | AY            | ug/L |   | 0    | 40 - 120     | NC  | 25        |
| 2,4-Dinitrotoluene                   | ND     |                  | 9.52        | 7.924  | J,DX          | ug/L |   | 83   | 65 - 120     | 2   | 25        |
| 2,6-Dinitrotoluene                   | ND     |                  | 9.52        | 8.533  | J,DX          | ug/L |   | 90   | 65 - 120     | 4   | 20        |
| Di-n-octyl phthalate                 | ND     |                  | 9.52        | 19.20  | LM            | ug/L |   | 202  | 65 - 135     | 1   | 20        |
| 1,2-Diphenylhydrazine(as Azobenzene) | ND     |                  | 9.52        | 9.676  |               | ug/L |   | 102  | 60 - 120     | 5   | 25        |
| Fluoranthene                         | ND     |                  | 9.52        | 11.05  |               | ug/L |   | 116  | 60 - 120     | 8   | 25        |
| Fluorene                             | ND     |                  | 9.52        | 8.381  |               | ug/L |   | 88   | 65 - 120     | 2   | 25        |
| Hexachlorobenzene                    | ND     |                  | 9.52        | 9.295  |               | ug/L |   | 98   | 60 - 120     | 2   | 25        |
| Hexachlorobutadiene                  | ND     |                  | 9.52        | 5.610  | J,DX          | ug/L |   | 59   | 40 - 120     | 6   | 25        |
| Hexachloroethane                     | ND     |                  | 9.52        | 5.746  | J,DX          | ug/L |   | 60   | 35 - 120     | 6   | 25        |
| Hexachlorocyclopentadiene            | ND     |                  | 9.52        | 2.686  | J,DX          | ug/L |   | 28   | 25 - 120     | 2   | 30        |
| Indeno[1,2,3-cd]pyrene               | ND     |                  | 9.52        | 11.58  |               | ug/L |   | 122  | 40 - 135     | 9   | 30        |
| Isophorone                           | ND     |                  | 9.52        | 12.19  | LM            | ug/L |   | 128  | 50 - 120     | 4   | 25        |
| 4-Methylphenol                       | ND     |                  | 9.52        | 9.524  | J,DX          | ug/L |   | 100  | 50 - 120     | 1   | 25        |
| Naphthalene                          | ND     |                  | 9.52        | 8.000  |               | ug/L |   | 84   | 55 - 120     | 1   | 25        |
| Nitrobenzene                         | ND     |                  | 9.52        | 10.67  |               | ug/L |   | 112  | 55 - 120     | 6   | 25        |
| 2-Nitrophenol                        | ND     |                  | 9.52        | 8.457  |               | ug/L |   | 89   | 50 - 120     | 0   | 25        |
| 4-Nitrophenol                        | ND     | LQ               | 9.52        | ND     | AY            | ug/L |   | 0    | 45 - 120     | NC  | 30        |

# 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) (Continued)

**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**

| Analyte                       | Sample | Sample    | Spike | MSD    | MSD           | Unit | D | %Rec | %Rec.    | RPD | Limit |
|-------------------------------|--------|-----------|-------|--------|---------------|------|---|------|----------|-----|-------|
|                               | Result | Qualifier | Added | Result | Qualifier     |      |   |      | Limits   |     |       |
| 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<br>RA | ug/L |   | 36   | 55 - 120 | 31  | 25    |
| 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<br>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    |

| Surrogate            | MSD       | MSD       | Limits   |
|----------------------|-----------|-----------|----------|
|                      | %Recovery | Qualifier |          |
| 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**

**Matrix: Water**

**Analysis Batch: 19543**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

| Analyte              | MB     | MB        | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
|                      | Result | Qualifier |     |      |      |   |          |                |         |
| Chromium, hexavalent | ND     |           | 1.0 | 0.25 | ug/L |   |          | 04/13/12 09:33 | 1       |

**Lab Sample ID: LCS 440-19543/2**

**Matrix: Water**

**Analysis Batch: 19543**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

| Analyte              | Spike Added | LCS    | LCS       | Unit | D | %Rec | %Rec.    |
|----------------------|-------------|--------|-----------|------|---|------|----------|
|                      |             | Result | Qualifier |      |   |      | Limits   |
| Chromium, hexavalent | 50.0        | 52.4   |           | ug/L |   | 105  | 90 - 110 |

# QC Sample Results

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

TestAmerica Job ID: 440-8620-1

## 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**

**Prep Type: Total/NA**

| Analyte              | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Chromium, hexavalent | 12            |                  | 50.0        | 62.9      |              | ug/L |   | 103  | 90 - 110     |

**Lab Sample ID: 440-8626-G-3 MSD**

**Matrix: Water**

**Analysis Batch: 19543**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

| Analyte              | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------------------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Chromium, hexavalent | 12            |                  | 50.0        | 65.3       |               | ug/L |   | 108  | 90 - 110     | 4   | 10        |

## 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**

| Analyte              | MB Result | MB 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**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

| Analyte              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------|-------------|------------|---------------|------|---|------|--------------|
| Nitrate as N         | 1.13        | 1.09       |               | 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**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

| Analyte              | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Nitrate as N         | 0.26          |                  | 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 Batch: 19784**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

| Analyte              | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------------------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Nitrate as N         | 0.26          |                  | 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        |

# QC Sample Results

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

TestAmerica Job ID: 440-8620-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 440-19785/2**

**Matrix: Water**

**Analysis Batch: 19785**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

| Analyte  | MB Result | MB Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|------|------|------|---|----------|----------------|---------|
| Chloride | ND        |              | 0.50 | 0.40 | mg/L |   |          | 04/14/12 10:38 | 1       |
| Sulfate  | ND        |              | 0.50 | 0.40 | mg/L |   |          | 04/14/12 10:38 | 1       |

**Lab Sample ID: LCS 440-19785/3**

**Matrix: Water**

**Analysis Batch: 19785**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

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

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

**Matrix: Water**

**Analysis Batch: 19785**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| 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**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| 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**

**Matrix: Water**

**Analysis Batch: 20654**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

| Analyte     | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| Perchlorate | ND        |              | 4.0 | 0.95 | ug/L |   |          | 04/19/12 19:22 | 1       |

**Lab Sample ID: LCS 440-20654/37**

**Matrix: Water**

**Analysis Batch: 20654**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

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

**Lab Sample ID: MRL 440-20654/2 MRL**

**Matrix: Water**

**Analysis Batch: 20654**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

| Analyte     | Spike Added | MRL Result | MRL Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------|-------------|------------|---------------|------|---|------|--------------|
| Perchlorate | 4.00        | 4.49       |               | ug/L |   | 112  |              |

# QC Sample Results

Client: MWH Americas Inc  
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

| Analyte     | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| 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

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

| Analyte     | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD  | RPD Limit |
|-------------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|------|-----------|
| 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: G2D23000077B  
Matrix: Water  
Analysis Batch: 2114077

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

| Analyte             | MB Result | MB 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 | J Q          | 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 | J Q          | 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 | J Q          | 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 | J Q          | 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 | J Q          | 0.000050 | 0.00000048  | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |
| Total PeCDF         | 0.0000050 | J Q          | 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 | J Q          | 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 | J Q          | 0.000050 | 0.000000030 | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |
| Total HxCDF         | 0.000011  | J Q          | 0.000050 | 0.000000030 | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |
| 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       |
| 1,2,3,4,7,8,9-HpCDF | 0.0000041 | J            | 0.000050 | 0.00000018  | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |
| Total HpCDF         | 0.0000094 | J            | 0.000050 | 0.00000017  | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |
| OCDF                | 0.0000070 | J            | 0.00010  | 0.00000031  | ug/L |   | 04/23/12 09:00 | 04/24/12 16:35 | 1       |

| Surrogate          | %Recovery | MB Qualifier | Limits   | Prepared       | Analyzed       | Dil Fac |
|--------------------|-----------|--------------|----------|----------------|----------------|---------|
| 37Cl4-2,3,7,8-TCDD | 86        |              | 35 - 197 | 04/23/12 09:00 | 04/24/12 16:35 | 1       |

| Internal Standard     | %Recovery | MB 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       |

# QC Sample Results

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

TestAmerica Job ID: 440-8620-1

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

**Lab Sample ID: G2D23000077B**

**Matrix: Water**

**Analysis Batch: 2114077**

**Client Sample ID: Method Blank**

**Prep Type: Total**

**Prep Batch: 2114077\_P**

| Internal Standard       | MB MB     |           | Limits   | Prepared       | Analyzed       | Dil Fac |
|-------------------------|-----------|-----------|----------|----------------|----------------|---------|
|                         | %Recovery | Qualifier |          |                |                |         |
| 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: G2D23000077C**

**Matrix: Water**

**Analysis Batch: 2114077**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total**

**Prep Batch: 2114077\_P**

| Analyte             | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %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   | B             | ug/L |   | 92   | 70 - 164 |  |
| 1,2,3,6,7,8-HxCDD   | 0.00100     | 0.000904   | B             | ug/L |   | 90   | 76 - 134 |  |
| 1,2,3,7,8,9-HxCDD   | 0.00100     | 0.000924   | B             | ug/L |   | 92   | 64 - 162 |  |
| 1,2,3,4,6,7,8-HpCDD | 0.00100     | 0.000954   | B             | ug/L |   | 95   | 70 - 140 |  |
| OCDD                | 0.00200     | 0.00188    | B             | 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   | B             | ug/L |   | 94   | 80 - 134 |  |
| 2,3,4,7,8-PeCDF     | 0.00100     | 0.000869   | B             | ug/L |   | 87   | 68 - 160 |  |
| 1,2,3,4,7,8-HxCDF   | 0.00100     | 0.000957   | B             | ug/L |   | 96   | 72 - 134 |  |
| 1,2,3,6,7,8-HxCDF   | 0.00100     | 0.000963   | B             | ug/L |   | 96   | 84 - 130 |  |
| 2,3,4,6,7,8-HxCDF   | 0.00100     | 0.000955   | B             | ug/L |   | 95   | 70 - 156 |  |
| 1,2,3,7,8,9-HxCDF   | 0.00100     | 0.00101    | B             | ug/L |   | 101  | 78 - 130 |  |
| 1,2,3,4,6,7,8-HpCDF | 0.00100     | 0.000948   | B             | ug/L |   | 95   | 82 - 122 |  |
| 1,2,3,4,7,8,9-HpCDF | 0.00100     | 0.000904   | B             | ug/L |   | 90   | 78 - 138 |  |
| OCDF                | 0.00200     | 0.00173    | B             | ug/L |   | 87   | 63 - 170 |  |

| Surrogate          | LCS LCS   |           | Limits   |
|--------------------|-----------|-----------|----------|
|                    | %Recovery | Qualifier |          |
| 37Cl4-2,3,7,8-TCDD | 85        |           | 31 - 191 |

| Internal Standard       | LCS LCS   |           | Limits   |
|-------------------------|-----------|-----------|----------|
|                         | %Recovery | Qualifier |          |
| 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 |

# QC Sample Results

Client: MWH Americas Inc  
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**

| <i>Internal Standard</i> | <i>LCS</i><br><i>%Recovery</i> | <i>LCS</i><br><i>Qualifier</i> | <i>Limits</i> |
|--------------------------|--------------------------------|--------------------------------|---------------|
| 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**

| <i>Analyte</i> | <i>MB</i><br><i>Result</i> | <i>MB</i><br><i>Qualifier</i> | <i>RL</i> | <i>MDL</i> | <i>Unit</i> | <i>D</i> | <i>Prepared</i> | <i>Analyzed</i> | <i>Dil Fac</i> |
|----------------|----------------------------|-------------------------------|-----------|------------|-------------|----------|-----------------|-----------------|----------------|
| 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**

| <i>Analyte</i> | <i>Spike</i><br><i>Added</i> | <i>LCS</i><br><i>Result</i> | <i>LCS</i><br><i>Qualifier</i> | <i>Unit</i> | <i>D</i> | <i>%Rec</i> | <i>%Rec.</i><br><i>Limits</i> |
|----------------|------------------------------|-----------------------------|--------------------------------|-------------|----------|-------------|-------------------------------|
| 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                      |

# QC Sample Results

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)

**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**

| Analyte   | Sample | Sample    | Spike | MS     | MS        | Unit | D | %Rec | %Rec.    | Limits |
|-----------|--------|-----------|-------|--------|-----------|------|---|------|----------|--------|
|           | Result | Qualifier |       | Result | Qualifier |      |   |      |          |        |
| 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**

| Analyte   | Sample | Sample    | Spike | MSD    | MSD       | Unit | D | %Rec | %Rec.    | Limits | RPD | RPD   |
|-----------|--------|-----------|-------|--------|-----------|------|---|------|----------|--------|-----|-------|
|           | Result | Qualifier |       | Result | Qualifier |      |   |      |          |        | 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**

| Analyte   | Sample | Sample    | Spike | MS     | MS        | Unit | D | %Rec | %Rec.    | Limits |
|-----------|--------|-----------|-------|--------|-----------|------|---|------|----------|--------|
|           | Result | Qualifier |       | Result | Qualifier |      |   |      |          |        |
| 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 |        |

# QC Sample Results

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)

**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**

| Analyte   | Sample | Sample Qualifier | Spike Added | MSD    | MSD Qualifier | Unit | D | %Rec | %Rec.    | RPD | Limit |
|-----------|--------|------------------|-------------|--------|---------------|------|---|------|----------|-----|-------|
|           | Result |                  |             | Result |               |      |   |      | Limits   |     |       |
| Boron     | ND     |                  | 0.500       | 0.516  |               | mg/L |   | 103  | 70 - 130 | 3   | 20    |
| Beryllium | ND     |                  | 500         | 482    |               | ug/L |   | 96   | 70 - 130 | 1   | 20    |
| Calcium   | 4.4    |                  | 2.50        | 6.68   |               | mg/L |   | 93   | 70 - 130 | 1   | 20    |
| Chromium  | ND     |                  | 500         | 523    |               | ug/L |   | 105  | 70 - 130 | 1   | 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 | 2   | 20    |
| Nickel    | 2.4    | J,DX             | 500         | 472    |               | ug/L |   | 94   | 70 - 130 | 0   | 20    |
| Vanadium  | ND     |                  | 500         | 518    |               | ug/L |   | 104  | 70 - 130 | 2   | 20    |
| Zinc      | 25     |                  | 500         | 515    |               | ug/L |   | 98   | 70 - 130 | 2   | 20    |
| Silver    | ND     |                  | 250         | 255    |               | ug/L |   | 102  | 70 - 130 | 2   | 20    |

**Lab Sample ID: MB 440-20065/1-C**  
**Matrix: Water**  
**Analysis Batch: 21614**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 21302**

| Analyte   | MB     | MB Qualifier | RL    | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|--------------|-------|-------|------|---|----------------|----------------|---------|
|           | Result |              |       |       |      |   |                |                |         |
| Aluminum  | ND     |              | 50    | 40    | ug/L |   | 04/23/12 10:11 | 04/24/12 11:42 | 1       |
| Boron     | 0.0317 | J,DX         | 0.050 | 0.020 | mg/L |   | 04/23/12 10:11 | 04/24/12 11:42 | 1       |
| Beryllium | ND     |              | 2.0   | 0.90  | ug/L |   | 04/23/12 10:11 | 04/24/12 11:42 | 1       |
| Calcium   | ND     |              | 0.10  | 0.050 | mg/L |   | 04/23/12 10:11 | 04/24/12 11:42 | 1       |
| Chromium  | ND     |              | 5.0   | 2.0   | ug/L |   | 04/23/12 10:11 | 04/24/12 11:42 | 1       |
| Iron      | ND     |              | 0.040 | 0.015 | mg/L |   | 04/23/12 10:11 | 04/24/12 11:42 | 1       |
| Magnesium | ND     |              | 0.020 | 0.012 | mg/L |   | 04/23/12 10:11 | 04/24/12 11:42 | 1       |
| Nickel    | ND     |              | 10    | 2.0   | ug/L |   | 04/23/12 10:11 | 04/24/12 11:42 | 1       |
| Vanadium  | ND     |              | 10    | 3.0   | ug/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       |
| Silver    | ND     |              | 10    | 6.0   | ug/L |   | 04/23/12 10:11 | 04/24/12 11:42 | 1       |

**Lab Sample ID: MB 440-20065/1-C**  
**Matrix: Water**  
**Analysis Batch: 23613**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 21302**

| Analyte | MB     | MB Qualifier | RL | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|--------------|----|-----|------|---|----------------|----------------|---------|
|         | Result |              |    |     |      |   |                |                |         |
| Arsenic | ND     |              | 10 | 7.0 | ug/L |   | 04/23/12 10:11 | 05/03/12 14:55 | 1       |

**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**

| Analyte   | Spike Added | LCS    | LCS Qualifier | Unit | D | %Rec | %Rec.    |
|-----------|-------------|--------|---------------|------|---|------|----------|
|           |             | Result |               |      |   |      | 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 |
| Zinc      | 500         | 502    |               | ug/L |   | 100  | 85 - 115 |

# QC Sample Results

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)

**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**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Silver  | 250         | 258        |               | ug/L |   | 103  | 85 - 115     |

**Lab Sample ID: LCS 440-20065/2-C**  
**Matrix: Water**  
**Analysis Batch: 23613**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Dissolved**  
**Prep Batch: 21302**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Arsenic | 500         | 498        |               | ug/L |   | 100  | 85 - 115     |

**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**

| Analyte   | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-----------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| 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           | mg/L |   | 95   | 70 - 130     |
| Chromium  | ND            |                  | 500         | 519       |              | ug/L |   | 104  | 70 - 130     |
| Iron      | 0.13          |                  | 0.500       | 0.613     |              | mg/L |   | 97   | 70 - 130     |
| 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 |   | 99   | 70 - 130     |
| Silver    | ND            |                  | 250         | 252       |              | ug/L |   | 101  | 70 - 130     |

**Lab Sample ID: 440-8609-F-12-F MS**  
**Matrix: Water**  
**Analysis Batch: 23613**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 21302**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Arsenic | ND            |                  | 500         | 527       |              | ug/L |   | 105  | 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**

| Analyte   | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %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    |

# QC Sample Results

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)

Lab Sample ID: 440-8609-F-12-G MSD  
 Matrix: Water  
 Analysis Batch: 23613

Client Sample ID: Matrix Spike Duplicate  
 Prep Type: Dissolved  
 Prep Batch: 21302

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Arsenic | ND            |                  | 500         | 516        |               | ug/L |   | 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

| Analyte  | MB Result | MB 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

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %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       |               | ug/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

| Analyte  | MB Result | MB Qualifier | 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  | MB Result | MB 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       |

# QC Sample Results

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

TestAmerica Job ID: 440-8620-1

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

**Lab Sample ID:** LCS 440-20333/2-E  
**Matrix:** Water  
**Analysis Batch:** 22326

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Dissolved  
**Prep Batch:** 21438

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Cadmium  | 80.0        | 85.5       |               | ug/L |   | 107  | 85 - 115     |
| Lead     | 80.0        | 88.3       |               | ug/L |   | 110  | 85 - 115     |
| Antimony | 80.0        | 85.6       |               | ug/L |   | 107  | 85 - 115     |
| Selenium | 80.0        | 88.0       |               | ug/L |   | 110  | 85 - 115     |

**Lab Sample ID:** LCS 440-20333/2-E  
**Matrix:** Water  
**Analysis Batch:** 22566

**Client Sample ID:** Lab Control Sample  
**Prep Type:** Dissolved  
**Prep Batch:** 21438

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %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  
**Matrix:** Water  
**Analysis Batch:** 22326

**Client Sample ID:** Outfall 008 composite  
**Prep Type:** Dissolved  
**Prep Batch:** 21438

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Cadmium  | ND            |                  | 80.0        | 86.8      |              | ug/L |   | 109  | 70 - 130     |
| Lead     | ND            |                  | 80.0        | 85.6      |              | ug/L |   | 107  | 70 - 130     |
| Antimony | ND            |                  | 80.0        | 84.2      |              | ug/L |   | 105  | 70 - 130     |
| Selenium | ND            |                  | 80.0        | 97.3      |              | ug/L |   | 122  | 70 - 130     |

**Lab Sample ID:** 440-8693-1 MS  
**Matrix:** Water  
**Analysis Batch:** 22566

**Client Sample ID:** Outfall 008 composite  
**Prep Type:** Dissolved  
**Prep Batch:** 21438

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Copper   | 3.6           | J,DX             | 80.0        | 90.1      |              | ug/L |   | 108  | 70 - 130     |
| Thallium | 1.2           | J,DX             | 80.0        | 81.2      |              | ug/L |   | 100  | 70 - 130     |

**Lab Sample ID:** 440-8693-1 MSD  
**Matrix:** Water  
**Analysis Batch:** 22326

**Client Sample ID:** Outfall 008 composite  
**Prep Type:** Dissolved  
**Prep Batch:** 21438

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Cadmium  | ND            |                  | 80.0        | 85.5       |               | ug/L |   | 107  | 70 - 130     | 2   | 20        |
| Lead     | ND            |                  | 80.0        | 83.9       |               | ug/L |   | 105  | 70 - 130     | 2   | 20        |
| Antimony | ND            |                  | 80.0        | 84.1       |               | ug/L |   | 105  | 70 - 130     | 0   | 20        |
| Selenium | ND            |                  | 80.0        | 95.4       |               | ug/L |   | 119  | 70 - 130     | 2   | 20        |

**Lab Sample ID:** 440-8693-1 MSD  
**Matrix:** Water  
**Analysis Batch:** 22566

**Client Sample ID:** Outfall 008 composite  
**Prep Type:** Dissolved  
**Prep Batch:** 21438

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | 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        |

# QC Sample Results

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

TestAmerica Job ID: 440-8620-1

## 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**

| Analyte | MB Result | MB Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|-----------|--------------|------|------|------|---|----------------|----------------|---------|
| Mercury | ND        |              | 0.20 | 0.10 | ug/L |   | 04/16/12 15:03 | 04/17/12 12:34 | 1       |

**Lab Sample ID: LCS 440-20031/2-A**  
**Matrix: Water**  
**Analysis Batch: 20257**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 20031**

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

**Lab Sample ID: 440-8609-G-14-B MS**  
**Matrix: Water**  
**Analysis Batch: 20257**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 20031**

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

**Lab Sample ID: 440-8609-G-14-C MSD**  
**Matrix: Water**  
**Analysis Batch: 20257**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 20031**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD  | RPD Limit |
|---------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|------|-----------|
| Mercury | ND            |                  | 8.00        | 8.03       |               | ug/L |   | 100  | 70 - 130     | 1.86 | 20        |

**Lab Sample ID: MB 440-19679/1-C**  
**Matrix: Water**  
**Analysis Batch: 20502**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 20049**

| Analyte | MB Result | MB Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|-----------|--------------|------|------|------|---|----------------|----------------|---------|
| Mercury | ND        |              | 0.20 | 0.10 | ug/L |   | 04/16/12 15:30 | 04/18/12 12:13 | 1       |

**Lab Sample ID: LCS 440-19679/2-C**  
**Matrix: Water**  
**Analysis Batch: 20502**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Dissolved**  
**Prep Batch: 20049**

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

**Lab Sample ID: 440-8443-G-1-C MS**  
**Matrix: Water**  
**Analysis Batch: 20502**

**Client Sample ID: Matrix Spike**  
**Prep Type: Dissolved**  
**Prep Batch: 20049**

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

**Lab Sample ID: 440-8443-G-1-D MSD**  
**Matrix: Water**  
**Analysis Batch: 20502**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Dissolved**  
**Prep Batch: 20049**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD  | RPD Limit |
|---------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|------|-----------|
| Mercury | ND            |                  | 8.00        | 8.18       |               | ug/L |   | 102  | 70 - 130     | 1.00 | 20        |

# QC Sample Results

Client: MWH Americas Inc  
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

| Analyte | MB Result | MB Qualifier | RL  | MDL | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|-----------|--------------|-----|-----|------|---|----------------|----------------|---------|
| HEM     | ND        |              | 5.0 | 1.4 | mg/L |   | 04/26/12 07:22 | 04/26/12 07:38 | 1       |

Lab Sample ID: LCS 440-22035/2-A  
Matrix: Water  
Analysis Batch: 22042

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 22035

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| HEM     | 20.0        | 18.1       |               | mg/L |   | 91   | 78 - 114     |

Lab Sample ID: LCSD 440-22035/3-A  
Matrix: Water  
Analysis Batch: 22042

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 22035

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---------|-------------|-------------|----------------|------|---|------|--------------|-----|-----------|
| HEM     | 20.0        | 18.5        |                | mg/L |   | 93   | 78 - 114     | 2   | 11        |

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

Lab Sample ID: MB 440-19957/1  
Matrix: Water  
Analysis Batch: 19957

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

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids | ND        |              | 10 | 10  | mg/L |   |          | 04/16/12 10:21 | 1       |

Lab Sample ID: LCS 440-19957/2  
Matrix: Water  
Analysis Batch: 19957

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

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Dissolved Solids | 1000        | 934        |               | mg/L |   | 93   | 90 - 110     |

Lab Sample ID: 440-8418-B-1 DU  
Matrix: Water  
Analysis Batch: 19957

Client Sample ID: Duplicate  
Prep Type: Total/NA

| Analyte                | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD  | RPD Limit |
|------------------------|---------------|------------------|-----------|--------------|------|---|------|-----------|
| Total Dissolved Solids | 2600          |                  | 2710      |              | mg/L |   | 3.00 | 10        |

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

Lab Sample ID: MB 440-20846/1  
Matrix: Water  
Analysis Batch: 20846

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

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Total Suspended Solids | ND        |              | 10 | 10  | mg/L |   |          | 04/19/12 17:19 | 1       |

# QC Sample Results

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

TestAmerica Job ID: 440-8620-1

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

Lab Sample ID: LCS 440-20846/2  
Matrix: Water  
Analysis Batch: 20846

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

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Suspended Solids | 1000        | 1020       |               | mg/L |   | 102  | 85 - 115     |

Lab Sample ID: 440-8596-A-1 DU  
Matrix: Water  
Analysis Batch: 20846

Client Sample ID: Duplicate  
Prep Type: Total/NA

| Analyte                | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD  | RPD Limit |
|------------------------|---------------|------------------|-----------|--------------|------|---|------|-----------|
| Total Suspended Solids | 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  
Matrix: Water  
Analysis Batch: 22273

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 22248

| Analyte        | MB Result | MB 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  
Matrix: Water  
Analysis Batch: 22273

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 22248

| Analyte        | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %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

Client Sample ID: Matrix Spike  
Prep Type: Total/NA  
Prep Batch: 22248

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

Lab Sample ID: 440-9403-A-1-C MSD  
Matrix: Water  
Analysis Batch: 22273

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA  
Prep Batch: 22248

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

## Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 440-20387/10  
Matrix: Water  
Analysis Batch: 20387

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

| Analyte  | MB Result | MB Qualifier | RL   | MDL   | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|------|-------|------|---|----------|----------------|---------|
| Fluoride | ND        |              | 0.10 | 0.020 | mg/L |   |          | 04/18/12 06:29 | 1       |

# QC Sample Results

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

TestAmerica Job ID: 440-8620-1

## Method: SM 4500 F C - Fluoride (Continued)

**Lab Sample ID: LCS 440-20387/9**

**Matrix: Water**

**Analysis Batch: 20387**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Fluoride | 1.00        | 1.00       |               | mg/L |   | 100  | 90 - 110     |

**Lab Sample ID: 440-8744-J-1 MS**

**Matrix: Water**

**Analysis Batch: 20387**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| 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**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD  | RPD Limit |
|----------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|------|-----------|
| Fluoride | 0.12          |                  | 1.00        | 1.06       |               | mg/L |   | 95   | 80 - 120     | 1.20 | 20        |

## Method: SM 4500 NH3 C - Ammonia

**Lab Sample ID: MB 440-22259/1-A**

**Matrix: Water**

**Analysis Batch: 22271**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 22259**

| Analyte        | MB Result | MB Qualifier | RL    | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------------|-----------|--------------|-------|-------|------|---|----------------|----------------|---------|
| Ammonia (as N) | ND        |              | 0.400 | 0.157 | mg/L |   | 04/26/12 19:26 | 04/26/12 21:20 | 1       |

**Lab Sample ID: LCS 440-22259/2-A**

**Matrix: Water**

**Analysis Batch: 22271**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 22259**

| Analyte        | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------|-------------|------------|---------------|------|---|------|--------------|
| Ammonia (as N) | 10.0        | 9.800      |               | mg/L |   | 98   | 85 - 115     |

**Lab Sample ID: 440-8694-M-1-B MS**

**Matrix: Water**

**Analysis Batch: 22271**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

**Prep Batch: 22259**

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

**Lab Sample ID: 440-8694-M-1-C MSD**

**Matrix: Water**

**Analysis Batch: 22271**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

**Prep Batch: 22259**

| Analyte        | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Ammonia (as N) | 0.280         | J,DX             | 10.0        | 10.08      |               | mg/L |   | 98   | 70 - 120     | 6   | 15        |

# QC Sample Results

Client: MWH Americas Inc  
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**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte | Blank Result | Blank 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**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte      | Blank Result | Blank 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**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte      | Blank Result | Blank 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**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte        | Blank Result | Blank 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**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte     | Blank Result | Blank 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**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte    | Blank Result | Blank 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**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte    | Blank Result | Blank 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       |

# QC Sample Results

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

TestAmerica Job ID: 440-8620-1

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

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

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

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte    | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|------------|-------------|------------|---------------|-------|---|------|--------------|
| Cesium-137 | 147         | 149        |               | pCi/L |   | 101  | 80 - 120     |
| Cobalt-60  | 130         | 126        |               | pCi/L |   | 97   | 80 - 120     |

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte      | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|--------------|-------------|------------|---------------|-------|---|------|--------------|
| Strontium-90 | 9.34        | 7.84       |               | pCi/L |   | 84   | 80 - 120     |

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte        | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|----------------|-------------|------------|---------------|-------|---|------|--------------|
| Uranium, Total | 56.5        | 64.2       |               | pCi/L |   | 114  | 80 - 120     |

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte    | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|------------|-------------|------------|---------------|-------|---|------|--------------|
| Radium-228 | 4.41        | 4.73       |               | pCi/L |   | 107  | 60 - 140     |

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte     | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|-------------|-------------|------------|---------------|-------|---|------|--------------|
| Gross Alpha | 37          | 40.4       |               | pCi/L |   | 109  | 70 - 130     |
| Gross Beta  | 34          | 32.6       |               | pCi/L |   | 96   | 70 - 130     |

**Lab Sample ID: S204070-03**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte    | Spike Added | LCS Result | LCS Qualifier | Unit  | D | %Rec | %Rec. Limits |
|------------|-------------|------------|---------------|-------|---|------|--------------|
| Radium-226 | 50.1        | 48.5       |               | pCi/L |   | 97   | 80 - 120     |

# QC Sample Results

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

TestAmerica Job ID: 440-8620-1

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

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte | Sample | Sample    | Duplicate | Duplicate | Unit  | D | RPD | Limit |
|---------|--------|-----------|-----------|-----------|-------|---|-----|-------|
|         | Result | Qualifier | Result    | Qualifier |       |   |     |       |
| Tritium | 19.4   |           | 18.5      | U         | pCi/L |   | 0   |       |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte      | Sample | Sample    | Duplicate | Duplicate | Unit  | D | RPD | Limit |
|--------------|--------|-----------|-----------|-----------|-------|---|-----|-------|
|              | Result | Qualifier | Result    | Qualifier |       |   |     |       |
| Strontium-90 | -0.131 |           | 0.038     | U         | pCi/L |   | 0   |       |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte      | Sample | Sample    | Duplicate | Duplicate | Unit  | D | RPD | Limit |
|--------------|--------|-----------|-----------|-----------|-------|---|-----|-------|
|              | Result | Qualifier | Result    | Qualifier |       |   |     |       |
| Cesium-137   | 0.152  |           | -0.761    | U         | pCi/L |   | 0   |       |
| Potassium-40 | -4.54  |           | 3.82      | U         | pCi/L |   | 0   |       |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte        | Sample | Sample    | Duplicate | Duplicate | Unit  | D | RPD | Limit |
|----------------|--------|-----------|-----------|-----------|-------|---|-----|-------|
|                | Result | Qualifier | Result    | Qualifier |       |   |     |       |
| Uranium, Total | 0.172  |           | 0.183     | J         | pCi/L |   | 6   |       |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte    | Sample | Sample    | Duplicate | Duplicate | Unit  | D | RPD | Limit |
|------------|--------|-----------|-----------|-----------|-------|---|-----|-------|
|            | Result | Qualifier | Result    | Qualifier |       |   |     |       |
| Radium-228 | 0.295  |           | 0.333     | U         | pCi/L |   | 0   |       |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte     | Sample | Sample    | Duplicate | Duplicate | Unit  | D | RPD | Limit |
|-------------|--------|-----------|-----------|-----------|-------|---|-----|-------|
|             | Result | Qualifier | Result    | Qualifier |       |   |     |       |
| Gross Alpha | 1.34   |           | 2.68      | J         | pCi/L |   | 67  |       |
| Gross Beta  | 4.81   |           | 5.29      |           | pCi/L |   | 10  |       |

**Lab Sample ID: S204070-05**  
**Matrix: WATER**  
**Analysis Batch: 8611**

**Client Sample ID: Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 8611\_P**

| Analyte    | Sample | Sample    | Duplicate | Duplicate | Unit  | D | RPD | Limit |
|------------|--------|-----------|-----------|-----------|-------|---|-----|-------|
|            | Result | Qualifier | Result    | Qualifier |       |   |     |       |
| Radium-226 | 0.266  |           | 0.08      | U         | pCi/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  |            |
| LCS 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 | 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      |
| LCS 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      |

# QC Association Summary

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

TestAmerica Job ID: 440-8620-1

## 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 | Client Sample ID      | Prep Type | Matrix | Method | Prep Batch |
|---------------|-----------------------|-----------|--------|--------|------------|
| 440-8693-1    | Outfall 008 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  |            |
| 440-8693-1          | 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

| 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      |
| 440-8693-1          | Outfall 008 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: 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  |            |
| 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  |            |

# 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 |            |



# QC Association Summary

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

TestAmerica Job ID: 440-8620-1

## Metals (Continued)

### Analysis Batch: 23052

| Lab Sample ID | Client Sample ID      | Prep Type         | Matrix | Method        | Prep Batch |
|---------------|-----------------------|-------------------|--------|---------------|------------|
| 440-8693-1    | Outfall 008 composite | Total Recoverable | Water  | 200.7 Rev 4.4 | 21521      |

### 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   | 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      |

## General Chemistry

### 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 |            |
| 440-8693-1      | Outfall 008 composite | Total/NA  | Water  | SM 2540C |            |
| LCS 440-19957/2 | Lab Control Sample    | Total/NA  | Water  | SM 2540C |            |
| MB 440-19957/1  | Method Blank          | Total/NA  | Water  | SM 2540C |            |

### 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 |            |
| 440-8693-1      | Outfall 008 composite | Total/NA  | Water  | SM 2540D |            |
| 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  | 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 |
|--------------------|------------------------|-----------|--------|--------|------------|
| 440-8620-1         | 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 |            |

# QC Association Summary

Client: MWH Americas Inc  
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     |
| 440-8693-1    | Outfall 008 composite | Total/NA  | Water  | K-40 CS-137          | 8611_P     |
| 440-8693-1    | Outfall 008 composite | Total/NA  | Water  | Gross Alpha and Beta | 8611_P     |
| 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, Combined    | 8611_P     |

# 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 and Beta | 8611_P     |
| S204070-04    | Method Blank       | Total/NA  | WATER  | Gross Alpha and Beta | 8611_P     |
| S204070-05    | Duplicate          | Total/NA  | WATER  | Gross Alpha and Beta | 8611_P     |

### 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 Batch |
|---------------|-----------------------|-----------|--------|--------------|------------|
| 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     |            |

# Definitions/Glossary

Client: MWH Americas Inc  
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)                   |

### 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).   |
| B         | Method blank contamination. The associated method blank contains the target analyte at a reportable level. |

### Metals

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

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

## Glossary

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

# Definitions/Glossary

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

TestAmerica Job ID: 440-8620-1

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## Glossary (Continued)

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| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|--------------|---|
| TEQ          | Toxicity Equivalent Quotient (Dioxin)                                       |

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# Certification Summary

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

TestAmerica Job ID: 440-8620-1

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

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

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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:

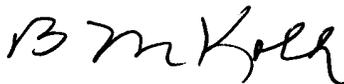
SAMPLE NO: Outfall 008 (440-8693-1)  
DATE COLLECTED: April 13, 2012 at 1855  
RECEIVED: April 17, 2012 at 1205  
UV-Ozone Treatment: April 17, 2012 1215 - 1515  
FILTERED: April 17, 2012 at 1532  
DATE ANALYZED: April 23, 2012

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.



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  
 DATE: 4/23/2012

| Laboratory I.D. | Client I.D.                 | FILTER MEDIA DATA |             |                                | No. of G.O. | Analyzed Area, mm <sup>2</sup> | Sample Volume (mL) |
|-----------------|-----------------------------|-------------------|-------------|--------------------------------|-------------|--------------------------------|--------------------|
|                 |                             | Type              | Diameter mm | Effective Area mm <sup>2</sup> |             |                                |                    |
| 150453-1        | Outfall 008<br>(440-8693-1) | PC                | 47          | 1017                           | 16          | 0.150                          | 1                  |
|                 |                             |                   |             |                                |             |                                |                    |
|                 |                             |                   |             |                                |             |                                |                    |
| 4-17-12-BL      | EMS Blank                   | PC                | 47          | 1017                           | 20          | 0.188                          | 500                |
|                 |                             |                   |             |                                |             |                                |                    |
|                 |                             |                   |             |                                |             |                                |                    |
|                 |                             |                   |             |                                |             |                                |                    |
|                 |                             |                   |             |                                |             |                                |                    |
|                 |                             |                   |             |                                |             |                                |                    |

\* FOR FIBERS > 10µm ONLY

**INDIVIDUAL ANALYTICAL RESULTS**

| Laboratory I.D. | Client I.D.                 | No of Asbestos Fibers | Detection Limit (MF/L) | Concentration MFL Fibers >10 µm |
|-----------------|-----------------------------|-----------------------|------------------------|---------------------------------|
| 150453-1        | Outfall 008<br>(440-8693-1) | ND                    | 6.8                    | < 6.8                           |
|                 |                             |                       |                        |                                 |
|                 |                             |                       |                        |                                 |
| 4-17-12-BL      | EMS Blank                   | ND                    | 0.01                   | < 0.01                          |
|                 |                             |                       |                        |                                 |
|                 |                             |                       |                        |                                 |
|                 |                             |                       |                        |                                 |
|                 |                             |                       |                        |                                 |

The analysis was carried out to the approved TEM method. This laboratory is in compliance with the quality specified by the method.

*Bm Kelle*

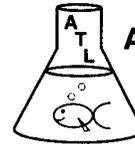
Authorized Signature

NA Not Applicable  
 ND None Detected  
 PC Polycarbonate Filter  
 GO Grid Openings  
 MFL Million Fibers per Liter





# LABORATORY REPORT



**Aquatic  
Testing  
Laboratories**

*"dedicated to providing quality aquatic toxicity testing"*

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

**Date:** April 18, 2012  
**Client:** Test America – Irvine  
17461 Derian Ave., Suite 100  
Irvine, CA 92614  
Attn: Debby Wilson

**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.

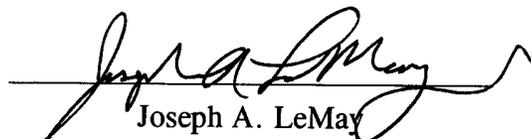
Date Sampled: 04/13/12  
Date Received: 04/13/12  
Temp. Received: 8.5°C  
Chlorine (TRC): 0.0 mg/l  
Date Tested: 04/14/12 to 04/18/12

**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:

| <u>Sample ID.</u>        | <u>Results</u>            |
|--------------------------|---------------------------|
| 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**

|         |         | °C   | DO  | pH  | # Dead |   | Analyst & Time of Readings |
|---------|---------|------|-----|-----|--------|---|----------------------------|
|         |         |      |     |     | A      | B |                            |
| INITIAL | Control | 19.2 | 9.0 | 8.2 | 0      | 0 | JK<br>1000                 |
|         | 100%    | 19.8 | 9.6 | 7.6 | 0      | 0 |                            |
| 24 Hr   | Control | 19.3 | 8.5 | 8.0 | 0      | 0 | Z<br>1100                  |
|         | 100%    | 19.6 | 8.4 | 7.7 | 0      | 0 |                            |
| 48 Hr   | Control | 19.4 | 7.4 | 7.9 | 0      | 0 | JK<br>1000                 |
|         | 100%    | 19.7 | 7.7 | 7.7 | 0      | 0 |                            |
| Renewal | Control | 19.7 | 7.9 | 8.0 | 0      | 0 | JK<br>1000                 |
|         | 100%    | 20.0 | 8.6 | 7.6 | 0      | 0 |                            |
| 72 Hr   | Control | 19.4 | 7.3 | 7.8 | 0      | 0 | Z<br>1000                  |
|         | 100%    | 19.6 | 7.0 | 7.6 | 0      | 0 |                            |
| 96 Hr   | Control | 19.8 | 7.4 | 7.9 | 0      | 0 | JK<br>1000                 |
|         | 100%    | 19.9 | 7.4 | 7.4 | 0      | 0 |                            |

**Comments:**

Sample as received: Chlorine: 0.0 mg/l; pH: 7.6; Conductivity: 87 umho; Temp: 8.5°C;  
 DO: 9.6 mg/l; Alkalinity: 50 mg/l; Hardness: 54 mg/l; NH<sub>3</sub>-N: 0.4 mg/l.  
 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 O<sub>2</sub>.

**RESULTS**

|                      |                       |                           |
|----------------------|-----------------------|---------------------------|
| Percent Survival In: | Control: <u>100</u> % | 100% Sample: <u>100</u> % |
|----------------------|-----------------------|---------------------------|

Client Name/Address:

MWH-Arcadia  
618 Michillinda Ave, Suite 200  
Arcadia, CA 91007

Project:

Boeing-SSFL NPDES  
Annual Outfall 008  
GRAB  
Stormwater at Happy Valley

Test America Contact: Debby Wilson

Project Manager: Bronwyn Kelly

Phone Number:  
(626) 568-6691  
Fax Number:  
(626) 568-6515

Sampler: *Rain Berry*

| Sample Description | Sample Matrix | Container Type | # of Cont. | Sampling Date/Time | Preservative | Bottle #   |
|--------------------|---------------|----------------|------------|--------------------|--------------|------------|
| Outfall 008        | W             | 1L Amber       | 2          | 4-13-12<br>1530    | HCl          | 1A, 1B     |
| Outfall 008        | W             | VOAS           | 3          |                    | HCl          | 2A, 2B, 2C |
| Outfall 008        | W             | VOAS           | 3          |                    | None         | 3A, 3B, 3C |
| Outfall 008        | W             | VOAS           | 3          |                    | HCl          | 4A, 4B, 4C |
| Trip Blanks        | W             | VOAS           | 3          |                    | None         | 5A, 5B, 5C |
| Outfall 008        | W             | 500 mL Poly    | 1          |                    | None         | 6          |
| Outfall 008        | W             | 125 mL Poly    | 1          |                    | Na2S2O3      | 7          |
| Outfall 008        | W             | 125 mL Poly    | 1          |                    | Na2S2O3      | 8          |
| Outfall 008        | W             | 1 Gal Cube     | 1          |                    | None         | 9          |
| Outfall 008        | W             | 125 mL Poly    | 1          | 4-13-12<br>1530    | None         | 10         |

| ANALYSIS REQUIRED       |   |
|-------------------------|---|
| Oil & Grease (1664-HEM) | X |
| VOCs 624, Xylenes + PP  | X |
| VOCs 624 +A+A+2CVE      | X |
| Cr (VI) (218.6)         | X |
| Fecal coliform (SM9221) | X |
| E. coli (SM9221)        | X |
| Acute Toxicity          | X |

Field readings:  
(Log in and include in report Temp and pH)  
Temp °F = **52**  
pH = **7.36**  
Time of readings = **1530**  
Comments

These Samples are the Grab Portion of Outfall 008 for this storm event. Composite samples will follow and are to be added to this work order.

Relinquished By: *Rain Berry*

Date/Time: 4-13-2012 15:48

Received By: *Debby Wilson*

Date/Time: 4-13-12 15:45

Relinquished By: *Debby Wilson*

Date/Time: 4-13-12 15:45

Received By: *Debby Wilson*

Date/Time: 4-13-12 15:45

Relinquished By: *Debby Wilson*

Date/Time: 4-13-12 5:30pm

Received By: *Debby Wilson*

Date/Time: 4-13-12 17:30

Turn-around time (Check):  
 24 Hour: \_\_\_\_\_  
 48 Hour: \_\_\_\_\_  
 72 Hour: \_\_\_\_\_  
 5 Day: \_\_\_\_\_  
 10 Day: \_\_\_\_\_  
 Normal:    
 Sample Integrity (Check):  
 Intact:    
 On Ice:    
 Data Requirements (Check):  
 No Level IV: \_\_\_\_\_  
 All Level IV: \_\_\_\_\_  
 NPDES Level IV:    
 NPDES Level IV:

**TestAmerica Irvine**  
 17481 Derlan Ave Suite 100  
 Irvine, CA 92614-5817  
 Phone (949) 261-1022 Fax (949) 260-3297

**Chain of Custody Record**

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

|  |                               |  |                                    |                                      |                            |
|--|-------------------------------|--|------------------------------------|--------------------------------------|----------------------------|
| <b>Client Information (Sub Contract Lab)</b>   |                               | Sampler:   | Lab Pat:                           | Garms Trading Net/:                  | DOC No:                    |
| Shipping/Receiving   |                               | Phone:   | Wilson, Debby                      |                                      | 440-40011                  |
| Company: Aquatic Testing Laboratories  |                               | E-Mail: debby.wilson@testamericainc.com  |                                    | Page 1 of 1                          |                            |
| Address: 4350 Transport #107,  | Due Date Requested: 4/27/2012 | <b>Analysis Requested</b>  |                                    |                                      |                            |
| City: Ventura  | TAT Requested (Days):         |  |                                    |                                      |                            |
| State, Zip: CA, 93003  | PO #:                         | SUBCONTRACT Acute FH minnow, EPA#21-R02-012  |                                    |                                      |                            |
| Phone:   | WFO #:                        |  |                                    |                                      |                            |
| Project Name: Annual Outfall 008 Grab  | Project #:                    | Special Instructions/Note:   |                                    |                                      |                            |
| Site: Baseline SSFL  | SSOW#:                        |  |                                    |                                      |                            |
| Sample Identification - Client ID (Lab ID):  | Sample Date:                  | Sample Time:   | Matrix Type (Concomp, Grab, etc.): | Matrix (Water, Sewer, Ground, etc.): | Special Instructions/Note: |
| Outfall 008 (440-8520-1)   | 4/13/12                       | 15:30  | Water                              |                                      |                            |
| <input type="checkbox"/> Sample Disposed (A fee may be assessed if samples are returned longer than 1 month)<br><input type="checkbox"/> Return To Client <input type="checkbox"/> Disposed By Lab <input type="checkbox"/> Archive For _____ Months<br><input type="checkbox"/> Special Instructions/OC Requirements: |                               |  |                                    |                                      |                            |
| <b>Possible Hazard Identification</b>  |                               |  |                                    |                                      |                            |
| Unconfirmed  |                               |  |                                    |                                      |                            |
| Deleterious Requested: I, II, III, IV, Other (Specify)   |                               |  |                                    |                                      |                            |
| Empty Kit Requisitioned by:  | Date:                         | Time:  |                                    |                                      |                            |
| Requisitioned by:  | Date/Time: 4/15/12            | Company:   | Received by:                       | Date/Time: 4-13-12 17:30             | Company: ATL               |
| Requisitioned by:  | Date/Time:                    | Company:   | Received by:                       | Date/Time:                           | Company:                   |
| Requisitioned by:  | Date/Time:                    | Company:   | Received by:                       | Date/Time:                           | Company:                   |
| Quoted Seal Intact: A, Yes, A No   | Quoted Seal No.:              | <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposed By Lab <input type="checkbox"/> Archive For _____ Months<br><input type="checkbox"/> Special Instructions/OC Requirements: |                                    |                                      |                            |



# ***REFERENCE TOXICANT DATA***

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# 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

| Date/Time:<br>Analyst: | INITIAL            |     |     | 24 Hr              |     |     |        |    | 48 Hr              |     |     |        |   |
|------------------------|--------------------|-----|-----|--------------------|-----|-----|--------|----|--------------------|-----|-----|--------|---|
|                        | <u>4-3-12 1130</u> |     |     | <u>4-4-12 1130</u> |     |     |        |    | <u>4-5-12 1130</u> |     |     |        |   |
|                        | <u>Z</u>           |     |     | <u>Z</u>           |     |     |        |    | <u>Z</u>           |     |     |        |   |
|                        | °C                 | DO  | pH  | °C                 | DO  | pH  | # Dead |    | °C                 | DO  | pH  | # Dead |   |
| A                      |                    |     |     |                    |     |     | B      | A  |                    |     |     | B      |   |
| Control                | 20.1               | 8.4 | 8.0 | 19.8               | 8.2 | 7.9 | 0      | 0  | 19.7               | 8.2 | 7.9 | 0      | 0 |
| 1.0 mg/l               | 19.9               | 8.5 | 7.9 | 19.8               | 8.2 | 7.9 | 0      | 0  | 19.6               | 8.1 | 7.9 | 0      | 0 |
| 2.0 mg/l               | 19.8               | 8.6 | 8.0 | 19.8               | 8.1 | 7.9 | 0      | 0  | 19.7               | 7.9 | 7.9 | 0      | 0 |
| 4.0 mg/l               | 19.7               | 8.8 | 8.0 | 19.8               | 8.2 | 7.9 | 0      | 0  | 19.7               | 7.8 | 7.9 | 1      | 0 |
| 8.0 mg/l               | 19.7               | 8.7 | 8.0 | 19.8               | 8.1 | 7.8 | 10     | 10 | -                  | -   | -   | -      | - |
| 16.0 mg/l              | 19.8               | 8.8 | 8.1 | 19.8               | 7.2 | 7.6 | 10     | 10 | -                  | -   | -   | -      | - |

| Date/Time:<br>Analyst: | RENEWAL            |     |     | 72 Hr              |     |     |        |   | 96 Hr              |     |     |        |   |
|------------------------|--------------------|-----|-----|--------------------|-----|-----|--------|---|--------------------|-----|-----|--------|---|
|                        | <u>4-5-12 1130</u> |     |     | <u>4-6-12 1130</u> |     |     |        |   | <u>4-7-12 1130</u> |     |     |        |   |
|                        | <u>Z</u>           |     |     | <u>Z</u>           |     |     |        |   | <u>Z</u>           |     |     |        |   |
|                        | °C                 | DO  | pH  | °C                 | DO  | pH  | # Dead |   | °C                 | DO  | pH  | # Dead |   |
| A                      |                    |     |     |                    |     |     | B      | A |                    |     |     | B      |   |
| Control                | 19.2               | 6.5 | 8.2 | 19.6               | 7.5 | 8.0 | 0      | 0 | 19.5               | 7.6 | 7.8 | 0      | 0 |
| 1.0 mg/l               | 19.6               | 6.8 | 8.1 | 19.6               | 7.8 | 7.9 | 0      | 0 | 19.4               | 7.8 | 7.8 | 0      | 0 |
| 2.0 mg/l               | 19.7               | 6.9 | 8.0 | 19.5               | 8.0 | 8.0 | 0      | 0 | 19.4               | 7.9 | 7.8 | 0      | 0 |
| 4.0 mg/l               | 19.7               | 6.9 | 8.0 | 19.6               | 8.1 | 7.9 | 0      | 0 | 19.4               | 8.0 | 7.8 | 0      | 1 |
| 8.0 mg/l               | -                  | -   | -   | -                  | -   | -   | -      | - | -                  | -   | -   | -      | - |
| 16.0 mg/l              | -                  | -   | -   | -                  | -   | -   | -      | - | -                  | -   | -   | -      | - |

Comments: Control: Alkalinity: 68 mg/l; Hardness: 97 mg/l; Conductivity: 327 umho.  
 SDS: Alkalinity: 69 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 Fish Test-96 Hr Survival**

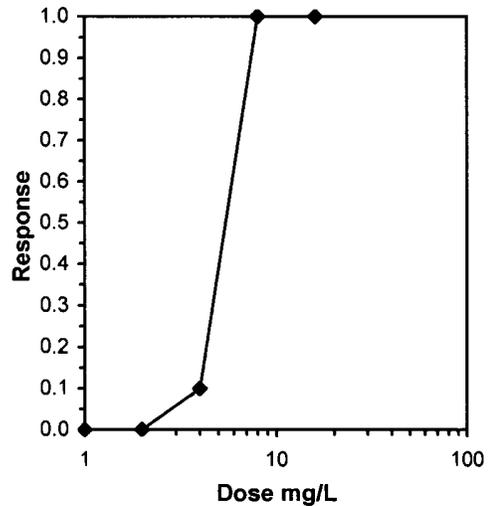
Start Date: 4/3/2012 11:30    Test ID: RT120403    Sample ID: REF-Ref Toxicant  
 End Date: 4/7/2012 11:30    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: SDS-Sodium dodecyl sulfate  
 Sample Date: 4/3/2012    Protocol: ACUTE-EPA-821-R-02-012    Test Species: PP-Pimephales promelas  
 Comments:

| 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 |

| Conc-mg/L | Transform: Arcsin Square Root |        |        |        |        |       |   | Number Resp | Total Number |
|-----------|-------------------------------|--------|--------|--------|--------|-------|---|-------------|--------------|
|           | Mean                          | N-Mean | Mean   | Min    | Max    | CV%   | N |             |              |
| 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           |

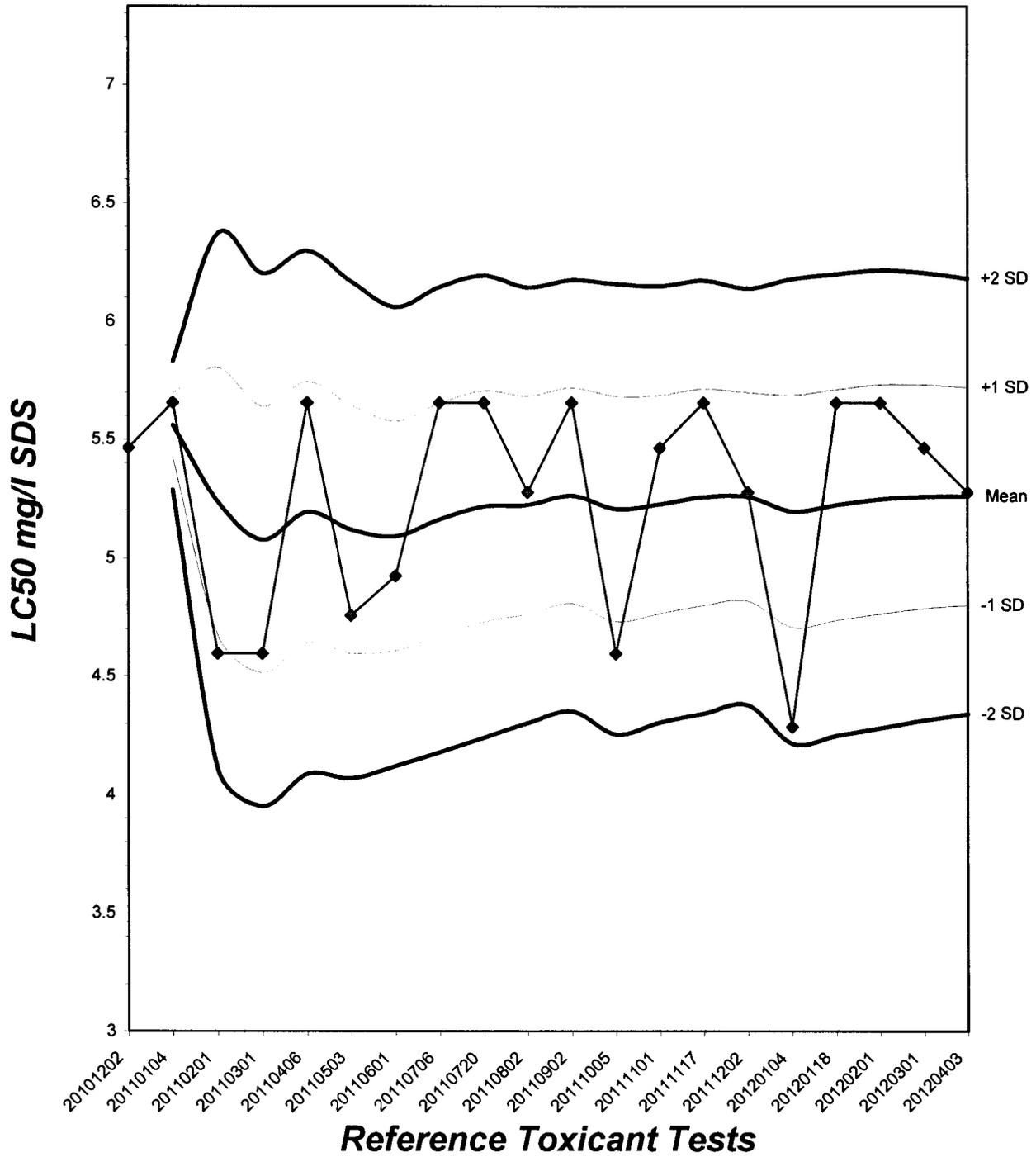
| Auxiliary Tests                               | Statistic | Critical | Skew | Kurt |
|---|-----------|----------|------|------|
| Normality of the data set cannot be confirmed |           |          |      |      |
| Equality of variance cannot be confirmed      |           |          |      |      |

| Trimmed Spearman-Kärber |        |        |        |
|-------------------------|--------|--------|--------|
| Trim Level              | 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 |
| 20.0%                   | 5.4432 | 5.1395 | 5.7648 |
| Auto-0.0%               | 5.2780 | 4.8093 | 5.7924 |



# Fathead Minnow Acute Laboratory Control Chart

CV% = 8.75



# TEST ORGANISM LOG

FATHEAD MINNOW - LARVAL  
(*Pimephales promelas*)



QA/QC BATCH NO.: RT120403

SOURCE: In-Lab Culture

DATE HATCHED: 3-20-12

APPROXIMATE QUANTITY: 40

GENERAL APPEARANCE: good

# MORTALITIES 48 HOURS PRIOR TO  
TO USE IN TESTING: 0

DATE USED IN LAB: 4/3/12

AVERAGE FISH WEIGHT: 0.006 gm

LOADING LIMITS: 0.65 gm/liter @ 20°C, 0.40 gm/liter @ 25°C

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.: 20.1 °C

pH: 8.0

Ammonia: 20.1 mg/l NH<sub>3</sub>-N

DO: 8.4 mg/l

Alkalinity: 68 mg/l

Hardness: 93 mg/l

READINGS RECORDED BY: [Signature]

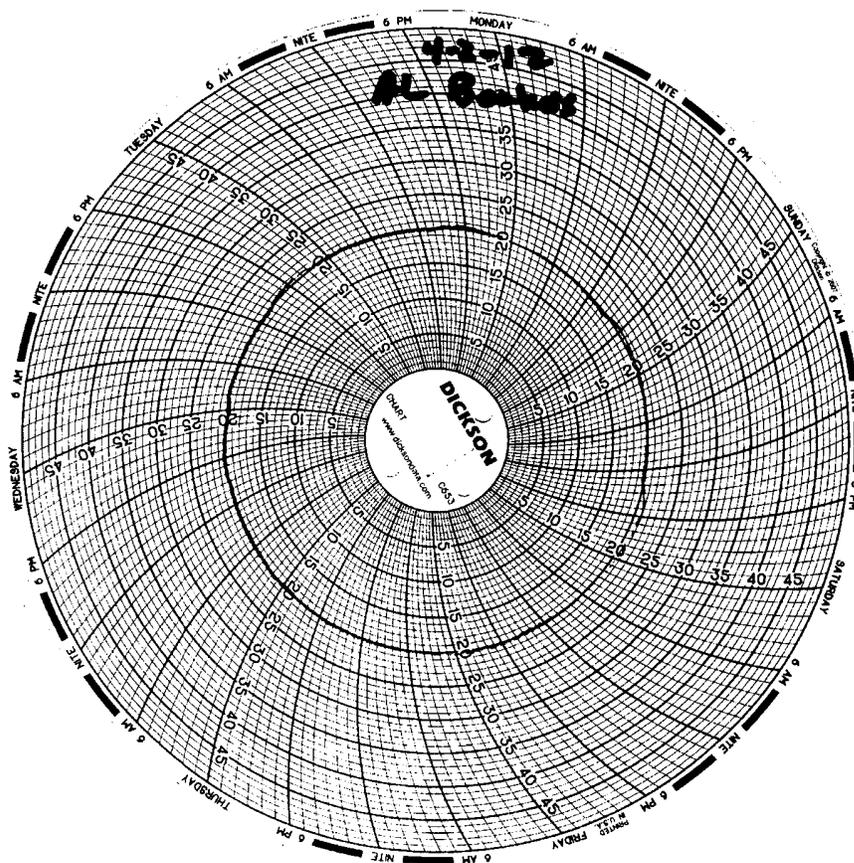
DATE: 4-4-12

# Test Temperature Chart

Test No: RT-120403

Date Tested: 04/03/12 to 04/07/06

Acceptable Range: 20 $\pm$ 1 $^{\circ}$ C





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

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 2σ error (Total):

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

**4.0 Analysis Notes**

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

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

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

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

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

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

**4.7 Gamma Spectroscopy** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

**5.0 Case Narrative Certification Statement**

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

  
\_\_\_\_\_  
**Joseph Verville**  
**Client Services Manager**

5/9/12  
\_\_\_\_\_  
**Date**

EBERLINE ANALYTICAL  
SDG 8611

SDG 8611  
Contact Joseph Verville

Client Test America, Inc.  
Contract 44002624

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

| T A B L E   O F   C O N T E N T S |   |   |   |    |
|-----------------------------------|---|---|---|----|
| About this section                | . | . | . | 1  |
| Sample Summaries                  | . | . | . | 3  |
| Prep Batch Summary                | . | . | . | 5  |
| Work Summary                      | . | . | . | 6  |
| Method Blanks                     | . | . | . | 8  |
| Lab Control Samples               | . | . | . | 9  |
| Duplicates                        | . | . | . | 10 |
| Data Sheets                       | . | . | . | 11 |
| Method Summaries                  | . | . | . | 12 |
| Report Guides                     | . | . | . | 20 |
| End of Section                    | . | . | . | 34 |

  
Prepared by \_\_\_\_\_

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

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

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

DUPLICATES

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 1

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



EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

ABOUT THE DATA SUMMARY SECTION

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

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 8611

LAB SAMPLE SUMMARY

SDG 8611  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

| LAB        |                          |             |        |       |        |            | CHAIN OF       |  |
|------------|--------------------------|-------------|--------|-------|--------|------------|----------------|--|
| SAMPLE ID  | CLIENT SAMPLE ID         | LOCATION    | MATRIX | LEVEL | SAS NO | CUSTODY    | 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 |  |

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- 13

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

EBERLINE ANALYTICAL

SDG 8611

QC SUMMARY

SDG 8611  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

| QC BATCH | CHAIN OF CUSTODY | CLIENT SAMPLE ID         | MATRIX | % MOIST | SAMPLE AMOUNT | BASIS AMOUNT | DAYS SINCE RECEIVED | LAB COLL SAMPLE ID | DEPARTMENT SAMPLE ID |
|----------|------------------|--------------------------|--------|---------|---------------|--------------|---------------------|--------------------|----------------------|
| 8611     | 440-4024.1       | OUTFALL 008 (440-8693-1) | WATER  |         | 10.0 L        |              | 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 L        |              | 04/17/12 4          | S204070-05         | 8612-005             |

- 1
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- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC SUMMARY

Page 1

SUMMARY DATA SECTION

Page 4

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

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

PREP BATCH SUMMARY

Client Test America, Inc.  
Contract 44002624

| TEST                          | MATRIX | METHOD                  | PREPARATION ERROR |      | PLANCHETS ANALYZED |      |          |     | QUALI-<br>FIERS |
|-------------------------------|--------|-------------------------|-------------------|------|--------------------|------|----------|-----|-----------------|
|                               |        |                         | BATCH             | 2σ % | CLIENT             | MORE | RE BLANK | LCS |                 |
| 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 Proportional Counting     |        |                         |                   |      |                    |      |          |     |                 |
| 80A                           | 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 Spectroscopy            |        |                         |                   |      |                    |      |          |     |                 |
| GAM                           | WATER  | Gamma Emitters in Water | 7271-144          | 7.0  | 1                  |      | 1        | 1   | 1/0/1           |
| Kinetic Phosphorimetry        |        |                         |                   |      |                    |      |          |     |                 |
| U_T                           | WATER  | Uranium, Total          | 7271-144          |      | 1                  |      | 1        | 1   | 1/0/1           |
| Liquid Scintillation Counting |        |                         |                   |      |                    |      |          |     |                 |
| H                             | WATER  | Tritium in Water        | 7271-144          | 10.0 | 1                  |      | 1        | 1   | 1/0/1           |
| Radon 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

Page 1

SUMMARY DATA SECTION

Page 5

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

EBERLINE ANALYTICAL

SDG 8611

LAB WORK SUMMARY

SDG 8611  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

| LAB SAMPLE | CLIENT SAMPLE ID         |        |          |        | SUF- |          |          |     |                         |  |
|------------|--------------------------|--------|----------|--------|------|----------|----------|-----|-------------------------|--|
| COLLECTED  | LOCATION                 | MATRIX |          |        | FIX  | ANALYZED | REVIEWED | BY  | METHOD                  |  |
| RECEIVED   | CUSTODY                  | SAS no | PLANCHET | TEST   |      |          |          |     |                         |  |
| 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 | H      |      | 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 | 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 | 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 | 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 | H      |      | 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 | H      |      | 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

Page 1

SUMMARY DATA SECTION

Page 6

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

EBERLINE ANALYTICAL

SDG 8611

WORK SUMMARY, cont.

SDG 8611  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

COUNTS OF TESTS BY SAMPLE TYPE

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

WORK SUMMARY

Page 2

SUMMARY DATA SECTION

Page 7

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

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13

EBERLINE ANALYTICAL

SDG 8611

8612-004

Method Blank

METHOD BLANK

|                                 |                                      |
|---------------------------------|--------------------------------------|
| SDG <u>8611</u>                 | Client <u>Test America, Inc.</u>     |
| Contact <u>Joseph Verville</u>  | Contract <u>44002624</u>             |
| Lab sample id <u>S204070-04</u> | Client sample id <u>Method Blank</u> |
| Dept sample id <u>8612-004</u>  | Material/Matrix <u>WATER</u>         |

| ANALYTE        | CAS NO   | RESULT<br>pCi/L | 2σ ERR<br>(COUNT) | MDA<br>pCi/L | RDL<br>pCi/L | QUALI-<br>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               | U_T  |
| Potassium-40   | 13966002 | 1.73            | 18                | <u>32.1</u>  | 25.0         | U               | GAM  |
| Cesium-137     | 10045973 | -0.940          | 1.7               | 3.07         | 20.0         | U               | GAM  |

QC-BLANK #81586

|                             |
|-----------------------------|
| Lab id <u>EAS</u>           |
| Protocol <u>TA</u>          |
| Version <u>Ver 1.0</u>      |
| Form <u>DVD-DS</u>          |
| Version <u>3.06</u>         |
| Report date <u>05/09/12</u> |



EBERLINE ANALYTICAL

SDG 8611

8612-005

OUTFALL 002 (440-8694-1)

DUPLICATE

|                                 |                                  |  |
|---------------------------------|----------------------------------|--|
| SDG <u>8611</u>                 | Client <u>Test America, Inc.</u> |  |
| Contact <u>Joseph Verville</u>  | Contract <u>44002624</u>         |  |
| DUPLICATE                       | ORIGINAL                         |  |
| Lab sample id <u>S204070-05</u> | Lab sample id <u>S204070-01</u>  | Client sample id <u>OUTFALL 002 (440-8694-1)</u>     |
| Dept sample id <u>8612-005</u>  | Dept sample id <u>8612-001</u>   | Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>      |
|                                 | Received <u>04/17/12</u>         | Collected/Volume <u>04/13/12 17:54</u> <u>10.0 L</u> |
|                                 |                                  | Chain of custody id <u>440-4025.1</u>                |

| ANALYTE        | DUPLICATE<br>pCi/L | 2σ ERR<br>(COUNT) | MDA<br>pCi/L | RDL<br>pCi/L | QUALI-<br>FIERS | TEST | ORIGINAL<br>pCi/L | 2σ ERR<br>(COUNT) | MDA<br>pCi/L | QUALI-<br>FIERS | RPD<br>% | 3σ<br>TOT | DER<br>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          | U               | H    | 19.4              | 88                | 148          | U               | -        | -         | 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                | <u>34.2</u>  | 25.0         | U               | GAM  | -4.54             | 15                | <u>26.9</u>  | U               | -        | -         | 0.7      |
| Cesium-137     | -0.761             | 1.8               | 3.22         | 20.0         | U               | GAM  | 0.152             | 1.3               | 1.58         | U               | -        | -         | 0.8      |

QC-DUP#1 81587

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

EBERLINE ANALYTICAL

SDG 8611

8611-001

OUTFALL 008 (440-8693-1)

DATA SHEET

|                                 |  |
|---------------------------------|--|
| SDG <u>8611</u>                 | Client <u>Test America, Inc.</u>                     |
| Contact <u>Joseph Verville</u>  | Contract <u>44002624</u>                             |
| Lab sample id <u>S204069-01</u> | Client sample id <u>OUTFALL 008 (440-8693-1)</u>     |
| Dept sample id <u>8611-001</u>  | Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>      |
| Received <u>04/17/12</u>        | Collected/Volume <u>04/13/12 18:55</u> <u>10.0 L</u> |
|                                 | Chain of custody id <u>440-4024.1</u>                |

| ANALYTE        | CAS NO   | RESULT<br>pCi/L | 2σ ERR<br>(COUNT) | MDA<br>pCi/L | RDL<br>pCi/L | QUALI-<br>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               | U_T  |
| Potassium-40   | 13966002 | -7.82           | 37                | <u>66.2</u>  | 25.0         | U               | GAM  |
| Cesium-137     | 10045973 | 0.091           | 2.6               | 4.54         | 20.0         | U               | GAM  |

|                             |
|-----------------------------|
| Lab id <u>EAS</u>           |
| Protocol <u>TA</u>          |
| Version <u>Ver 1.0</u>      |
| Form <u>DVD-DS</u>          |
| Version <u>3.06</u>         |
| Report date <u>05/09/12</u> |

EBERLINE ANALYTICAL

SDG 8611

Test AC Matrix WATER  
 SDG 8611  
 Contact Joseph Verville

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

|            |          |                          |         |
|------------|----------|--------------------------|---------|
| 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     |

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

METHOD PERFORMANCE

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

Preparation batch 7271-144 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.012

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

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

AVERAGES ± 2 SD MDA 0.399 ± 0.024  
 FOR 4 SAMPLES YIELD 80 ± 5

METHOD SUMMARIES

Page 1

SUMMARY DATA SECTION

Page 12

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

EBERLINE ANALYTICAL

SDG 8611

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

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

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 |

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

METHOD PERFORMANCE

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

Preparation batch 7271-144 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.012

|            |  |                          |       |              |  |  |  |    |     |  |    |          |       |         |
|------------|--|--------------------------|-------|--------------|--|--|--|----|-----|--|----|----------|-------|---------|
| S204069-01 |  | OUTFALL 008 (440-8693-1) | 1.06  | <u>0.500</u> |  |  |  | 93 | 50  |  | 13 | 04/26/12 | 04/26 | GRB-223 |
| S204070-03 |  | Lab Control Sample       | 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 (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

AVERAGES ± 2 SD MDA 0.630 ± 0.773  
 FOR 4 SAMPLES YIELD 90 ± 8

METHOD SUMMARIES

Page 2

SUMMARY DATA SECTION

Page 13

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

EBERLINE ANALYTICAL

SDG 8611

Test 80A Matrix WATER

SDG 8611

Contact Joseph Verville

Client Test America, Inc.

Contract 44002624

LAB METHOD SUMMARY

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

RESULTS

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

Preparation batch 7271-144

|            |    |          |                          |        |
|------------|----|----------|--------------------------|--------|
| 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   |

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

METHOD PERFORMANCE

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

Preparation batch 7271-144 2σ prep error 20.6 % Reference Lab Notebook No. 7271 pg.012

|            |    |                          |       |              |    |     |    |          |       |         |
|------------|----|--------------------------|-------|--------------|----|-----|----|----------|-------|---------|
| S204069-01 | 80 | OUTFALL 008 (440-8693-1) | 1.00  | <u>0.220</u> | 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 | <u>0.220</u> | 93 | 400 | 17 | 04/26/12 | 04/30 | GRB-109 |

Nominal values and limits from method 3.00 0.300 0-250 100 180

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

AVERAGES ± 2 SD MDA 1.05 ± 0.882  
FOR 4 SAMPLES RESIDUE 73 ± 29

METHOD SUMMARIES

Page 3

SUMMARY DATA SECTION

Page 14

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

EBERLINE ANALYTICAL

SDG 8611

Test 80B Matrix WATER  
 SDG 8611  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

LAB METHOD SUMMARY

GROSS BETA IN WATER  
 GAS PROPORTIONAL COUNTING

RESULTS

| LAB                                   | RAW      | SUF-     |                          |  |            |
|---------------------------------------|----------|----------|--------------------------|--|------------|
| SAMPLE ID                             | TEST FIX | PLANCHET | CLIENT SAMPLE ID         |  | Gross Beta |
| Preparation batch 7271-144            |          |          |                          |  |            |
| S204069-01                            | 80       | 8611-001 | OUTFALL 008 (440-8693-1) |  | 5.44       |
| 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     | ANAL-    |         |          |
|--|----------|--------------------------|-------|--------------|------|-------|-------|-----|-------|------|-------|----------|----------|---------|----------|
| SAMPLE ID  | TEST FIX | CLIENT SAMPLE ID         | pCi/L | L            | FAC  | TION  | mg    | %   | min   | keV  | KeV   | HELD     | PREPARED | YZED    | DETECTOR |
| Preparation batch 7271-144      2σ prep error 11.0 %      Reference Lab Notebook No. 7271 pg.012 |          |                          |       |              |      |       |       |     |       |      |       |          |          |         |          |
| S204069-01   | 80       | OUTFALL 008 (440-8693-1) | 1.12  | <u>0.220</u> |      |       | 75    |     | 400   |      | 17    | 04/26/12 | 04/30    | GRB-104 |          |
| 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  | <u>0.220</u> |      |       | 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 1.32 ± 1.13  
 FOR 4 SAMPLES      RESIDUE 73 ± 29

METHOD SUMMARIES  
 Page 4  
 SUMMARY DATA SECTION  
 Page 15

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

EBERLINE ANALYTICAL

SDG 8611

Test GAM Matrix WATER

SDG 8611

Contact Joseph Verville

Client Test America, Inc.

Contract 44002624

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

RESULTS

LAB RAW SUF-  
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Cobalt-60 Cesium-137

Preparation batch 7271-144

|            |          |                          |    |     |
|------------|----------|--------------------------|----|-----|
| 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)   |    | - U |

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

METHOD PERFORMANCE

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

Preparation batch 7271-144 2σ prep error 7.0 % Reference Lab Notebook No. 7271 pg.012

|            |                          |      |     |    |          |       |         |
|------------|--------------------------|------|-----|----|----------|-------|---------|
| S204069-01 | OUTFALL 008 (440-8693-1) | 2.00 | 400 | 13 | 04/26/12 | 04/26 | MB,G5,0 |
| 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 values and limits from method 6.00 2.00 400 180

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

METHOD SUMMARIES

Page 5

SUMMARY DATA SECTION

Page 16

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

EBERLINE ANALYTICAL

SDG 8611

Test U T Matrix WATER

SDG 8611

Contact Joseph Verville

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

|            |  |  |          |                          |         |
|------------|--|--|----------|--------------------------|---------|
| S204069-01 |  |  | 8611-001 | OUTFALL 008 (440-8693-1) | 0.642 J |
| S204070-03 |  |  | 8612-003 | Lab Control Sample       | ok      |
| S204070-04 |  |  | 8612-004 | Method Blank             | U       |
| S204070-05 |  |  | 8612-005 | Duplicate (S204070-01)   | ok J    |

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

METHOD PERFORMANCE

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

Preparation batch 7271-144 2σ prep error Reference Lab Notebook No. 7271 pg.012

|            |  |  |                          |       |        |  |  |  |  |  |  |  |    |          |       |         |
|------------|--|--|--------------------------|-------|--------|--|--|--|--|--|--|--|----|----------|-------|---------|
| S204069-01 |  |  | OUTFALL 008 (440-8693-1) | 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 values and limits from method 1.00 0.0200 180

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD  
FOR 4 SAMPLES

MDA 0.059 ± 0.163  
YIELD \_\_\_\_\_ ± \_\_\_\_\_

METHOD SUMMARIES

Page 6

SUMMARY DATA SECTION

Page 17

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

EBERLINE ANALYTICAL

SDG 8611

Test H Matrix WATER  
 SDG 8611  
 Contact Joseph Verville

Client Test America, Inc.  
 Contract 44002624

LAB METHOD SUMMARY

TRITIUM IN WATER  
 LIQUID SCINTILLATION COUNTING

RESULTS

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

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 |

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

METHOD PERFORMANCE

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

Preparation batch 7271-144 2σ prep error 10.0 % Reference Lab Notebook No. 7271 pg.012

|            |                          |     |        |     |     |   |          |       |         |
|------------|--------------------------|-----|--------|-----|-----|---|----------|-------|---------|
| 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 |
| S204070-05 | Duplicate (S204070-01)   | 152 | 0.0100 | 100 | 150 | 6 | 04/19/12 | 04/19 | LSC-007 |

Nominal values and limits from method 500 0.0100 100 180

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

AVERAGES ± 2 SD MDA 152 ± 1.00  
 FOR 4 SAMPLES YIELD 55 ± 104

METHOD SUMMARIES  
 Page 7  
 SUMMARY DATA SECTION  
 Page 18

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

EBERLINE ANALYTICAL

SDG 8611

Test RA Matrix WATER  
 SDG 8611  
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LAB METHOD SUMMARY

RADIUM-226 IN WATER

RADON COUNTING

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 Contract 44002624

RESULTS

LAB RAW SUP-  
 SAMPLE ID TEST FIX 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 |

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

METHOD PERFORMANCE

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

Preparation batch 7271-144 2σ prep error 16.4 % Reference Lab Notebook No. 7271 pg.012

|            |                          |       |       |     |     |    |          |       |        |
|------------|--------------------------|-------|-------|-----|-----|----|----------|-------|--------|
| 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 values and limits from method 1.00 0.100 100 180

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

AVERAGES ± 2 SD MDA 0.636 ± 0.104  
 FOR 4 SAMPLES YIELD 100 ± 0

METHOD SUMMARIES

Page 8

SUMMARY DATA SECTION

Page 19

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

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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



EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
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REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

These qualifiers should be reviewed as follows:

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

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

REPORT GUIDES

Page 2

SUMMARY DATA SECTION

Page 21

|             |                 |
|-------------|-----------------|
| 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 8611  
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REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

WORK SUMMARY

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

The following notes apply to this report:

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

REPORT GUIDES

Page 3

SUMMARY DATA SECTION

Page 22

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

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

DATA SHEET

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

The following notes apply to this report:

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

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

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

The following qualifiers are defined by the DVD system:

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

REPORT GUIDES

Page 4

SUMMARY DATA SECTION

Page 23

|             |                 |
|-------------|-----------------|
| 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> |

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

DATA SHEET

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

REPORT GUIDES

Page 5

SUMMARY DATA SECTION

Page 24

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

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

DATA SHEET

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

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

REPORT GUIDES

Page 6

SUMMARY DATA SECTION

Page 25

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



EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

- \* REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- \* The first, computed limits for the recovery reflect:
  1. The error of RESULT, including that introduced by rounding the result prior to printing.  
  
If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
  2. The error of ADDED.
  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- \* The second limits are protocol defined upper and lower QC limits for the recovery.
- \* The recovery is underlined if it is outside either of these ranges.

REPORT GUIDES

Page 7

SUMMARY DATA SECTION

Page 26

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

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

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.

REPORT GUIDES

Page 8

SUMMARY DATA SECTION

Page 27

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

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

DUPLICATE

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

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

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

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

REPORT GUIDES

Page 9

SUMMARY DATA SECTION

Page 28

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

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract 44002624

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

2. The error of ADDED.

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

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

REPORT GUIDES

Page 10

SUMMARY DATA SECTION

Page 29

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

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

MATRIX SPIKE

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

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

REPORT GUIDES

Page 11

SUMMARY DATA SECTION

Page 30

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



EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

Client Test America, Inc.  
Contract 44002624

REPORT GUIDE

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

REPORT GUIDES

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



EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
 Contact Joseph Verville

GUIDE, cont.

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

REPORT GUIDES

Page 13

SUMMARY DATA SECTION

Page 32

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

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

METHOD SUMMARY

specified for the method.

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

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

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

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

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

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

REPORT GUIDES

Page 14

SUMMARY DATA SECTION

Page 33

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

EBERLINE ANALYTICAL

SDG 8611

SDG 8611  
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract 44002624

METHOD SUMMARY

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

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

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

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

REPORT GUIDES

Page 15

SUMMARY DATA SECTION

Page 34

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





**RICHMOND, CA LABORATORY**  
SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA  
 Date/Time received 4/17/12 10:00 CoC No. 440-4022.1, 440-4023.1, 440-4025.1 440-4024.1  
 Container I.D. No. 3 ice chest Requested TAT (Days) STANDARD O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? by 4/17/12 Yes [  ] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? splitted into Yes [  ] No [ ] N/A [ ]
3. Custody seals on sample containers intact? 4 groups Yes [ ] No [ ] N/A [ ] N/A ✓
4. Custody seals on sample containers dated & signed? Yes [ ] No [ ] N/A [ ] N/A ✓
5. Packing material is: Wet [ ] Dry [ ] N/A ✓
6. Number of samples in shipping container: 5 Sample Matrix WATER
7. Number of containers per sample: \_\_\_\_\_ (Or see CoC ✓)
8. Samples are in correct container Yes [  ] No [ ]
9. Paperwork agrees with samples? Yes [  ] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [  ]
11. Samples are: In good condition [  ] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [  ] Not preserved [  ] pH 2/6 Preservative \_\_\_\_\_
13. Describe any anomalies:  
\_\_\_\_\_  
\_\_\_\_\_
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date \_\_\_\_\_
15. Inspected by JK Date: 4/17/12 Time: 11:20

| Customer Sample No.        | Beta/Gamma cpm | Ion Chamber mR/hr | Wipe | Customer Sample No. | Beta/Gamma cpm | Ion Chamber mR/hr | wipe |
|----------------------------|----------------|-------------------|------|---------------------|----------------|-------------------|------|
| <u>All samples &lt; 80</u> |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |
|                            |                |                   |      |                     |                |                   |      |

Ion Chamber Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_  
 Alpha Meter Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_  
 Beta/Gamma Meter Ser. No. 100422 Calibration date 6 Dec 2011

# LABORATORY REPORT



*"dedicated to providing quality aquatic toxicity testing"*

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

**Date:** April 21, 2012

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

**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  
Temp. Received: 9.6°C  
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:                          | <u>NOEC</u> | <u>TUc</u> |
|-----------------------------------|-------------|------------|
| <i>Ceriodaphnia</i> Survival:     | 100%        | 1.0        |
| <i>Ceriodaphnia</i> Reproduction: | 100%        | 1.0        |

**Quality Control:** Reviewed and approved by:

  
Joseph A. LeMay  
Laboratory Director

**CERIODAPHNIA CHRONIC BIOASSAY  
EPA METHOD 1002.0**



Lab No.: A-12041403-001  
Client/ID: TestAmerica - Outfall 008 (440-8693-1)

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

**TEST SUMMARY**

|   |  |
|---|--|
| Test type: Daily static-renewal.                | Endpoints: Survival and Reproduction.    |
| Species: <i>Ceriodaphnia dubia</i> .            | Source: In-laboratory culture.           |
| Age: < 24 hrs; all released within 8 hrs.       | Food: .1 ml YTC, algae per day.          |
| Test vessel size: 30 ml.                        | Test solution volume: 15 ml.             |
| Number of test organisms per vessel: 1.         | Number of replicates: 10.                |
| Temperature: 25 +/- 1°C.                        | Photoperiod: 16/8 hrs. light/dark cycle. |
| Dilution water: Mod. hard reconstituted (MHRW). | Test duration: 6 days.                   |
| QA/QC Batch No.: RT-120403.                     | 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                            |
| Sample not statistically significantly less than Control 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 (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) |

**Ceriodaphnia Survival and Reproduction Test-Survival Day 6**

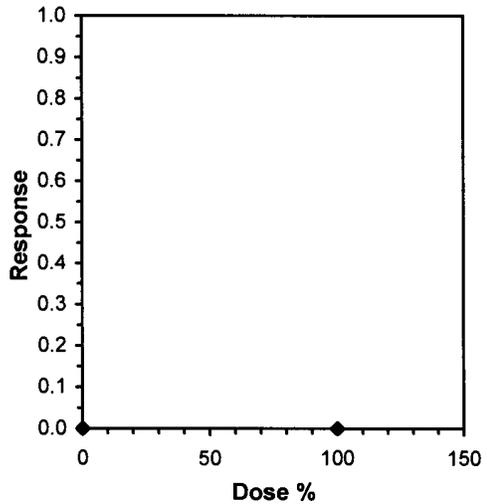
Start Date: 4/14/2012 15:00 Test ID: 12041403c Sample ID: Outfall 008  
 End Date: 4/20/2012 14:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/13/2012 18:55 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia  
 Comments:

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

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

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

| Point | %    | SD | Linear Interpolation (200 Resamples) |      |
|-------|------|----|--------------------------------------|------|
|       |      |    | 95% CL                               | Skew |
| IC05  | >100 |    |                                      |      |
| IC10  | >100 |    |                                      |      |
| IC15  | >100 |    |                                      |      |
| IC20  | >100 |    |                                      |      |
| IC25  | >100 |    |                                      |      |
| IC40  | >100 |    |                                      |      |
| IC50  | >100 |    |                                      |      |



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/14/2012 15:00 Test ID: 12041403c Sample ID: Outfall 008  
 End Date: 4/20/2012 14:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/13/2012 18:55 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia 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 |

| Conc-%    | Mean   | N-Mean | Transform: Untransformed |        |        |        |      | N      | Rank Sum | 1-Tailed Critical | Isotonic |  |
|-----------|--------|--------|--------------------------|--------|--------|--------|------|--------|----------|-------------------|----------|--|
|           |        |        | Mean                     | Min    | Max    | CV%    | 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  |         |         |

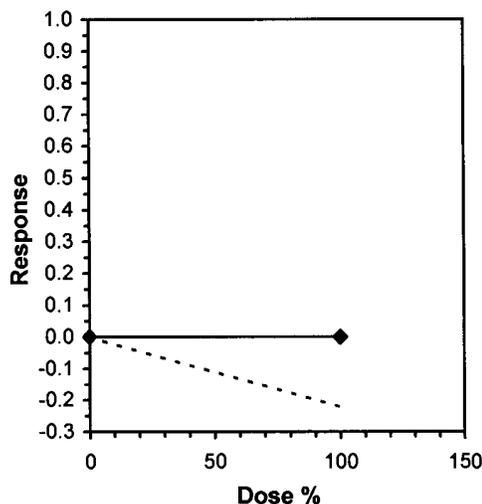
**Hypothesis Test (1-tail, 0.05)**

Wilcoxon Two-Sample Test indicates no significant differences

Treatments vs D-Control

**Linear Interpolation (200 Resamples)**

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



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/14/2012 15:00 Test ID: 12041403c Sample ID: Outfall 008  
 End Date: 4/20/2012 14:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater  
 Sample Date: 4/13/2012 18:55 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia 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 |

| Conc-%    | Mean   | N-Mean | Transform: Untransformed |        |        |        |          | N      | t-Stat | 1-Tailed |  |
|-----------|--------|--------|--------------------------|--------|--------|--------|----------|--------|--------|----------|--|
|           |        |        | Mean                     | Min    | Max    | CV%    | 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 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  |         |         |       |         |        |         |         |       |
| 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

Client ID: TestAmerica - Outfall 008

Start Date: 04/14/2012

|                   |      | DAY 1       |      | DAY 2       |      | DAY 3       |      | DAY 4       |      | DAY 5       |      | DAY 6       |      | DAY 7       |      |
|-------------------|------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|
|                   |      | 0 hr        | 24hr |
| Analyst Initials: |      | [Signature] |      |
| Time of Readings: |      | 1500        | 1500 | 1500        | 1500 | 1500        | 1500 | 1500        | 1500 | 1500        | 1430 | 1430        | 1430 |             |      |
| Control           | DO   | 8.6         | 7.9  | 8.4         | 7.9  | 7.5         | 7.6  | 7.8         | 7.9  | 8.4         | 8.0  | 9.1         | 8.3  |             |      |
|                   | pH   | 8.1         | 8.0  | 8.1         | 8.0  | 8.1         | 7.8  | 7.9         | 8.0  | 8.0         | 9.9  | 7.7         | 7.9  |             |      |
|                   | Temp | 24.3        | 24.3 | 24.3        | 24.6 | 24.7        | 24.3 | 24.4        | 24.3 | 24.4        | 24.7 | 24.7        | 25.1 |             |      |
| 100%              | DO   | 8.5         | 8.0  | 9.0         | 8.0  | 8.9         | 8.1  | 8.6         | 7.8  | 9.2         | 7.8  | 9.1         | 8.7  |             |      |
|                   | pH   | 8.2         | 8.0  | 8.1         | 7.8  | 7.8         | 7.9  | 7.8         | 7.8  | 7.7         | 7.9  | 7.5         | 8.0  |             |      |
|                   | Temp | 24.4        | 24.6 | 24.7        | 24.7 | 24.2        | 24.2 | 25.1        | 24.3 | 24.7        | 24.4 | 24.3        | 24.7 |             |      |

| Additional Parameters                | Control | 100% Sample |
|--------------------------------------|---------|-------------|
| Conductivity (umohms)                | 376     | 121         |
| Alkalinity (mg/l CaCO <sub>3</sub> ) | 68      | 49          |
| Hardness (mg/l CaCO <sub>3</sub> )   | 99      | 49          |
| Ammonia (mg/l NH <sub>3</sub> -N)    | <0.1    | 0.6         |

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

| Sample  | Day   | Number of Young Produced |    |    |    |    |    |    |    |    |    | Total Live Young | No. Live Adults | Analyst Initials |             |
|---------|-------|--------------------------|----|----|----|----|----|----|----|----|----|------------------|-----------------|------------------|-------------|
|         |       | A                        | B  | C  | D  | E  | F  | G  | H  | I  | J  |                  |                 |                  |             |
| Control | 1     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | [Signature]      |             |
|         | 2     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | [Signature]      |             |
|         | 3     | 3                        | 4  | 4  | 0  | 0  | 0  | 5  | 0  | 4  | 0  | 20               | 10              | [Signature]      |             |
|         | 4     | 0                        | 0  | 0  | 5  | 3  | 3  | 0  | 4  | 0  | 4  | 19               | 10              | [Signature]      |             |
|         | 5     | 6                        | 7  | 9  | 0  | 9  | 8  | 10 | 12 | 10 | 0  | 71               | 10              | [Signature]      |             |
|         | 6     | 15                       | 14 | 10 | 12 | 10 | 14 | 13 | 11 | 12 | 9  | 120              | 10              | [Signature]      |             |
|         | 7     | -                        | -  | -  | -  | -  | -  | -  | -  | -  | -  | -                | -               | -                | [Signature] |
|         | Total | 24                       | 25 | 23 | 17 | 22 | 25 | 28 | 27 | 26 | 13 | 230              | 10              | [Signature]      |             |
| 100%    | 1     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | [Signature]      |             |
|         | 2     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | [Signature]      |             |
|         | 3     | 0                        | 4  | 5  | 0  | 0  | 0  | 0  | 5  | 5  | 0  | 19               | 10              | [Signature]      |             |
|         | 4     | 5                        | 0  | 0  | 4  | 4  | 5  | 3  | 0  | 0  | 4  | 25               | 10              | [Signature]      |             |
|         | 5     | 7                        | 9  | 8  | 12 | 10 | 11 | 10 | 7  | 8  | 12 | 94               | 10              | [Signature]      |             |
|         | 6     | 15                       | 12 | 16 | 16 | 15 | 12 | 14 | 15 | 14 | 14 | 143              | 10              | [Signature]      |             |
|         | 7     | -                        | -  | -  | -  | -  | -  | -  | -  | -  | -  | -                | -               | -                | [Signature] |
|         | Total | 27                       | 25 | 29 | 32 | 29 | 28 | 27 | 27 | 27 | 30 | 281              | 10              | [Signature]      |             |

Circled fourth brood not used in statistical analysis.

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



# ***CHAIN OF CUSTODY***

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

| Client Name/Address:<br>MMWH-Arcadia<br>618 Michilinda Ave, Suite 200<br>Arcadia, CA 91007        |                            |                                    | Project:<br>Boeing-SSFL NPDES<br>Annual Outfall 008<br>COMPOSITE<br>Stormwater at Happy Valley |   |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
|---|----------------------------|------------------------------------|--|---|--------------------------------|----------|--|--------------------------|---|----------------------|-------------------|----------|--|--|------------------|----------|------------------|------------------|--|---------|--|--|--|--|
| Project Manager: Bronwyn Kelly  |                            |                                    | Phone Number:<br>(626) 568-6691<br>Fax Number:<br>(626) 568-6515                               |   |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Sampler: <b>RICK BAYBAP</b>   |                            |                                    |  |   |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Sample Description  | Sample Matrix              | Container Type                     | # of Cont  | Sampling Date/Time                                  | Preservative                   | Bottle # | ANALYSIS REQUIRED  |                          |   |                      |                   |          |  |  |                  | Comments |                  |                  |  |         |  |  |  |  |
|   |                            |                                    |  |   |                                |          | Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, B, V, Ti, Fe, Al, Se, Zn + PP, Hardness as CaCO <sub>3</sub> | TCDD (and all congeners) | Cl <sup>-</sup> , SO <sub>4</sub> , NO <sub>3</sub> +NO <sub>2</sub> -N, F, Perchlorate | Nitrate-N, Nitrite-N | Ammonia-N (350.2) | TDS, TSS | Pesticides/PCBs, Chlorpyrifos, Diazinon + PP | Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1) | SVOCs (625) + PP |          | Chronic Toxicity | Asbestos (100.2) | Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, B, V, Ti, Fe, Al, Ni, Se, Zn + PP, Hardness as CaCO <sub>3</sub> | Cyanide |  |  |  |  |
| Outfall 008   | W                          | 1L Poly                            | 1  | 4-15-2012<br>18:55                                  | HNO <sub>3</sub>               | 10A      | X  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008 Dup   | W                          | 1L Poly                            | 1  |   | HNO <sub>3</sub>               | 10B      |  | X                        |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 1L Amber                           | 2  |   | None                           | 11A, 11B |  |                          | X   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 500 mL Poly                        | 2  |   | None                           | 12A, 12B |  |                          |   | X                    |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 500 mL Poly                        | 1  |   | None                           | 13       |  |                          |   | X                    |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 500 mL Poly                        | 1  |   | H <sub>2</sub> SO <sub>4</sub> | 14       |  |                          |   | X                    |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 500 mL Poly                        | 2  |   | None                           | 15A, 15B |  |                          |   |                      | X                 |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 1L Amber                           | 2  |   | None                           | 16A, 16B |  |                          |   |                      |                   | X        |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 2.5 Gal Cube                       | 1  |   | None                           | 17A      |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 500 mL Amber                       | 1  |   | None                           | 17B      |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 1L Amber                           | 2  |   | None                           | 18A, 18B |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 1L Poly                            | 1  |   | None                           | 19       |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 1L Poly                            | 1  |   | None                           | 20       |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 1L Poly                            | 1  |   | None                           | 21       |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Outfall 008   | W                          | 500 mL Poly                        | 1  |   | NaOH                           | 22       |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| COC Page 2 of 2 list the Composite Samples for Outfall 008 for this storm event                   |                            |                                    |  |   |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| These must be added to the same work order for COC Page 1 of 2 for Outfall 008 for the same event |                            |                                    |  |   |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Relinquished By: <i>Rick Baybap</i>   | Date/Time: 4-15-2012 12:35 | Received By: <i>Rick Baybap</i>    | Date/Time: 4-14-12 12:35   |   |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Relinquished By: <i>Mark O'Connell</i>  | Date/Time: 4-14-12 14:00   | Received By: <i>Mark O'Connell</i> | Date/Time: 4-14-12 14:00   |   |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Relinquished By: _____  | Date/Time: _____           | Received By: _____                 | Date/Time: _____   |   |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Data Requirements: (Check)  |                            |                                    |  | NPDES Level IV: <input checked="" type="checkbox"/> |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| 24 Hour: _____ 72 Hour: _____   |                            |                                    |  | 10 Day: <input checked="" type="checkbox"/>         |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| 48 Hour: _____ 5 Day: _____   |                            |                                    |  | Normal: _____                                       |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Sample Integrity: (Check)   |                            |                                    |  |   |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |
| Intact: _____ On Ice: _____   |                            |                                    |  |   |                                |          |  |                          |   |                      |                   |          |  |  |                  |          |                  |                  |  |         |  |  |  |  |

**TestAmerica Irvine**  
 17461 Delian Ave Suite 100  
 Irvine, CA 92614-5817  
 Phone (949) 261-1022 Fax (949) 260-3297

**Chain of Custody Record**

**TestAmerica**  
 THE LEADER IN ENVIRONMENTAL TESTING

|   |         |   |   |  |                                     |
|---|---------|---|---|--|-------------------------------------|
| <b>Client Information (Sub Contract Lab)</b>  |         | Sampler:                                    | Lab P#: Wilson, Debby                   | Order Tracking Info:                       |                                     |
| Shipping/Receiving:   |         | Phone:                                      | E-Mail: debby.wilson@testamericainc.com |  |                                     |
| <b>Agency: Aquatic Testing Laboratories</b>   |         | Due Date Requested:                         | <b>Analysis Requested</b>               |  |                                     |
| Address: 4350 Transport #107  |         | 4/30/2012                                   |   |  |                                     |
| City: Ventura   |         | Lab Requested (dup):                        |   |  |                                     |
| State Zip: CA, 93003  |         |   |   |  |                                     |
| Phone:  |         | PO #:                                       |   |  |                                     |
| Email:  |         | WO #:                                       |   |  |                                     |
| Project Name: Annual Outfall 008  |         | Project #:                                  |   |  |                                     |
| Site: Boeing S9FL   |         | SSDVAR                                      |   |  |                                     |
| <b>Sample Identification - Client (D/Lab ID)</b>  |         | <b>Sample Date</b>                          | <b>Sample Time</b>                      | <b>Sample Type (Grab, Composite, etc.)</b> | <b>Matrix (In-situ, Grab, etc.)</b> |
| Outfall 008 (440-8893-1)  | 4/13/12 | 18:55                                       |   | Water                                      |                                     |
| <input checked="" type="checkbox"/> SUBCONTRACTY Chronic: Carlo, EPAN21-R02-013   |         |   |   |  |                                     |
| <b>Special Instructions/Notes:</b>  |         |   |   |  |                                     |
| <input type="checkbox"/> Sample Disposed (A fee may be assessed if samples are retained longer than 7 months)<br><input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months<br><b>Special Instructions/QC Requirements:</b> |         |   |   |  |                                     |
| <b>Possible Hazard Identification</b>   |         |   |   |  |                                     |
| Unconfirmed   |         |   |   |  |                                     |
| Deliverable Requested: I, II, III, IV, Other (specify)  |         |   |   |  |                                     |
| Empty Kit Relinquished by:  |         | Date:                                       | Time:                                   | Method of Storage:                         |                                     |
| Relinquished by: [Signature]  |         | Date/Time: 4/16/12                          |   | Received by: [Signature]                   |                                     |
| Relinquished by:  |         | Date/Time:                                  | Company:                                | Received by:                               |                                     |
| Relinquished by:  |         | Date/Time:                                  | Company:                                | Received by: [Signature]                   |                                     |
| Quicker Seal Intact: Quicker Seal No. 10  |         | Colder Temperature: 13 and 20/10 3 samples. |   |  |                                     |

- COG No: 440-4007-1  
 Page: Page 1 of 1  
 Job #: 440-8893-1
- Preservation Codes:**
- A - HCL
  - B - NH<sub>4</sub>OH
  - C - Zn Acetate
  - D - Nitric Acid
  - E - Nitric Acid
  - F - HNO<sub>3</sub>
  - G - Ammonia
  - H - Ammoniac Acid
  - I - Ice
  - J - Dry Weigh
  - K - EDTA
  - L - EDTA
  - Other:
- M - Hexams
  - N - None
  - O - Asst/02
  - P - Na2CO3
  - Q - Na2SO3
  - R - Na2S2O3
  - S - H2SO4
  - T - TSP Dodecylsulfate
  - U - Acetone
  - V - MeCN
  - W - pH 4.5
  - Z - other (specify)



***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 Survival |   | Mean Number of Young Per Female |    |
|----------------------|------------------|---|---------------------------------|----|
| 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)                              |

**Ceriodaphnia Survival and Reproduction Test-Survival Day 6**

Start Date: 4/3/2012 14:00    Test ID: RT120403c    Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia dubia  
 Comments:

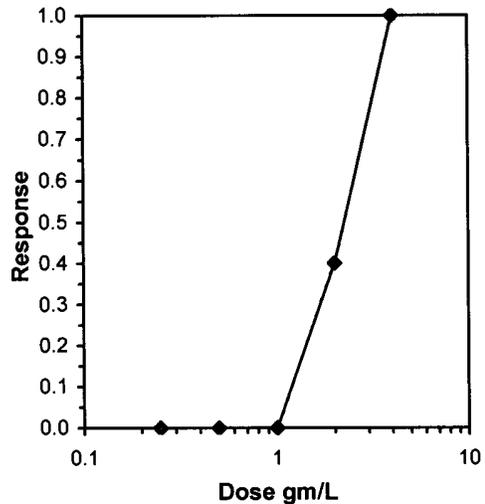
| Conc-gm/L | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-Control | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000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

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

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

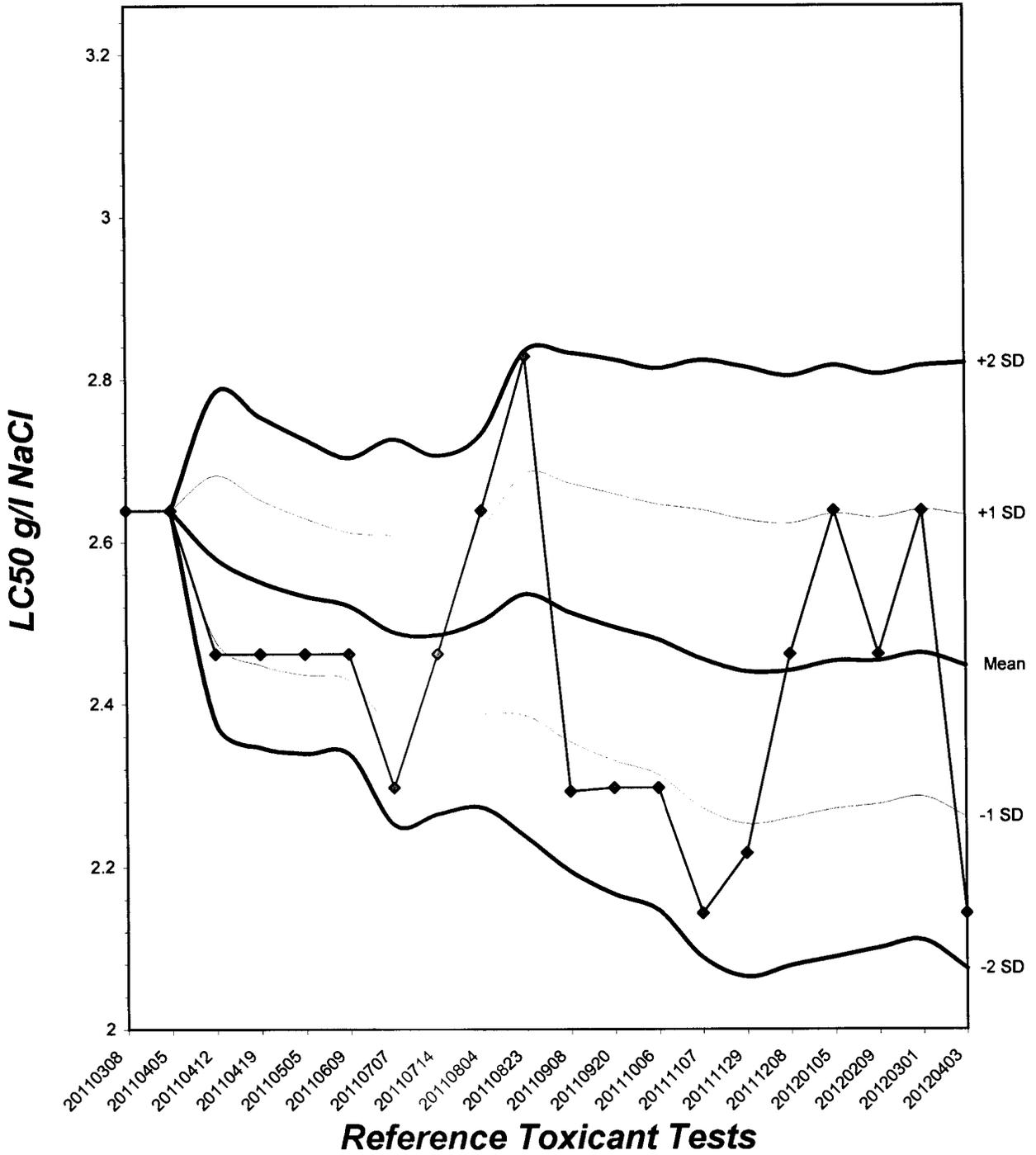
**Trimmed Spearman-Kärber**

| 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

CV% = 7.61



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/3/2012 14:00    Test ID: RT120403c    Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia dubia  
 Comments:

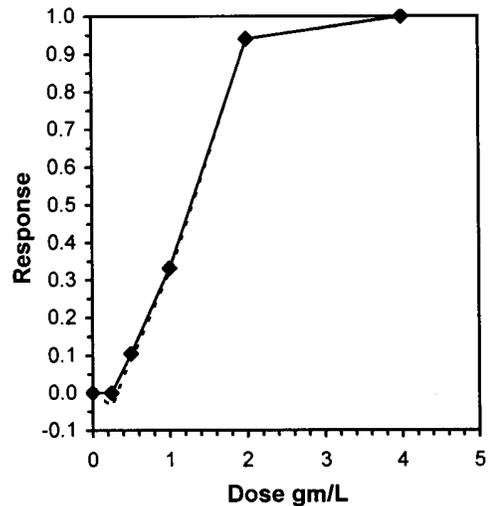
| Conc-gm/L | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| D-Control | 20.000 | 17.000 | 25.000 | 25.000 | 24.000 | 27.000 | 28.000 | 27.000 | 20.000 | 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  |

| Conc-gm/L | Mean   | N-Mean | Transform: Untransformed |        |        |         |    | Rank Sum | 1-Tailed Critical | Isotonic |        |
|-----------|--------|--------|--------------------------|--------|--------|---------|----|----------|-------------------|----------|--------|
|           |        |        | Mean                     | Min    | Max    | CV%     | N  |          |                   | Mean     | N-Mean |
| D-Control | 23.500 | 1.0000 | 23.500                   | 17.000 | 28.000 | 15.441  | 10 |          |                   | 23.900   | 1.0000 |
| 0.25      | 24.300 | 1.0340 | 24.300                   | 17.000 | 29.000 | 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  | 5.000  | 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 non-normal distribution (p <= 0.05) | 0.93053   | 0.94     | -0.5964 | -0.342 |
| Bartlett's Test indicates equal variances (p = 0.53)              | 2.22089   | 11.3449  |         |        |

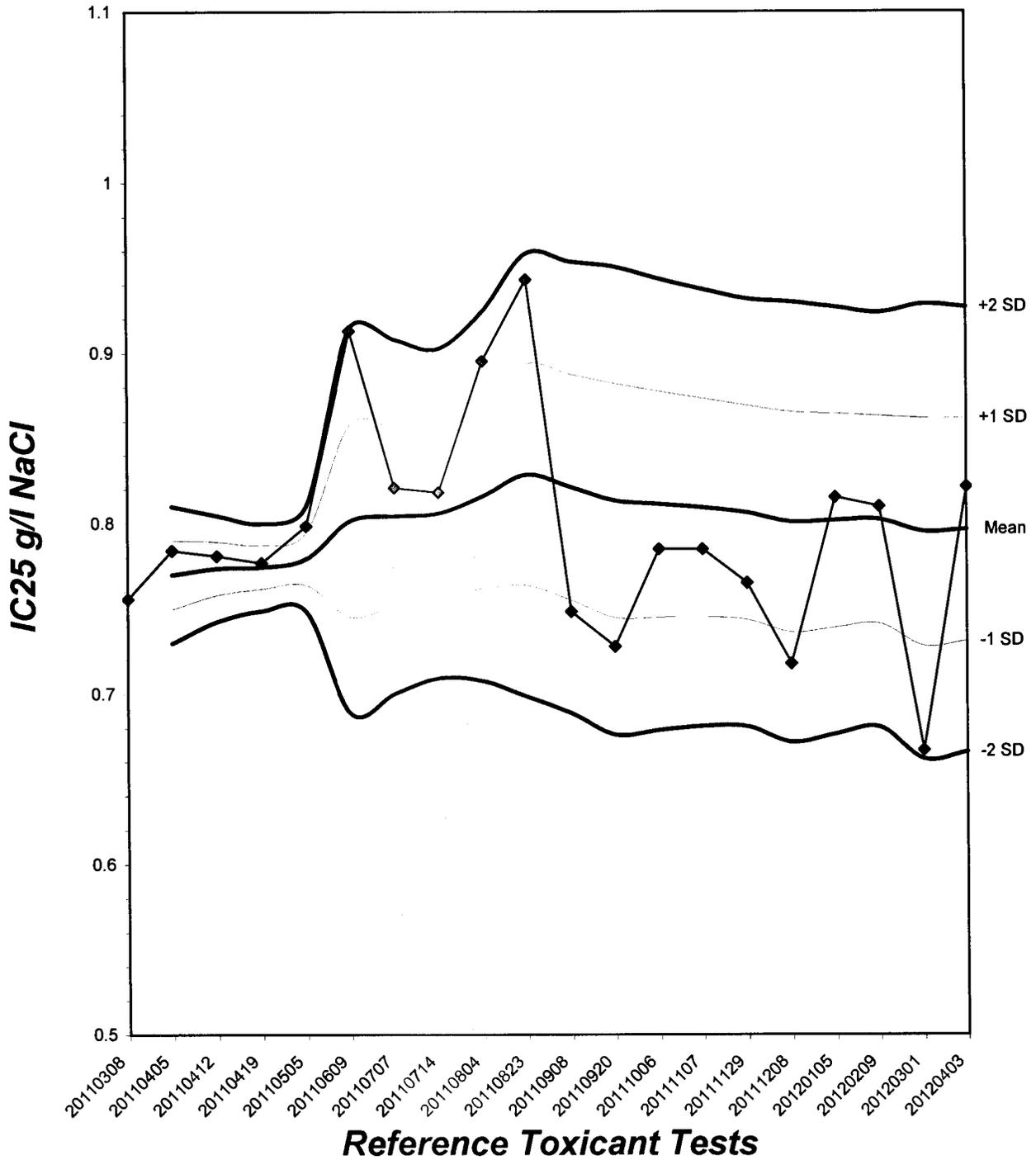
| Hypothesis Test (1-tail, 0.05) | NOEC | LOEC | ChV     | TU |
|--------------------------------|------|------|---------|----|
| Steel's Many-One Rank Test     | 0.5  | 1    | 0.70711 |    |
| Treatments vs D-Control        |      |      |         |    |

| Linear Interpolation (200 Resamples) |        |        |        |        |         |
|--------------------------------------|--------|--------|--------|--------|---------|
| 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 | 0.6622 | 0.1815  |
| IC15                                 | 0.6005 | 0.1009 | 0.4034 | 0.7714 | 0.1407  |
| IC20                                 | 0.7111 | 0.1157 | 0.4592 | 0.9579 | 0.1807  |
| IC25                                 | 0.8218 | 0.1195 | 0.5745 | 1.0536 | 0.0455  |
| IC40                                 | 1.1137 | 0.1010 | 0.8928 | 1.2609 | -0.5191 |
| IC50                                 | 1.2774 | 0.0905 | 1.0680 | 1.4019 | -0.8577 |



# Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 8.18



**Ceriodaphnia Survival and Reproduction Test-Reproduction**

Start Date: 4/3/2012 14:00    Test ID: RT120403c    Sample ID: REF-Ref Toxicant  
 End Date: 4/9/2012 14:00    Lab ID: CAATL-Aquatic Testing Labs    Sample Type: NACL-Sodium chloride  
 Sample Date: 4/3/2012    Protocol: FWCH-EPA-821-R-02-013    Test Species: CD-Ceriodaphnia 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  |

| Conc-gm/L | Mean   | N-Mean | Transform: Untransformed |        |        |         |          | N      | t-Stat | 1-Tailed |  |
|-----------|--------|--------|--------------------------|--------|--------|---------|----------|--------|--------|----------|--|
|           |        |        | Mean                     | Min    | Max    | CV%     | 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 distribution (p <= 0.05) |  | 0.93053   | 0.94     | -0.5964 | -0.342 |         |        |       |         |         |       |
| Bartlett's Test indicates equal variances (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   |  |           |          |         |        |         |        |       |         |         |       |

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



QA/QC No.: RT-120403

Start Date: 04/03/2012

| Sample   | Day   | Number of Young Produced |    |    |    |    |    |    |    |    |    | Total Live Young | No. Live Adults | Analyst Initials |
|----------|-------|--------------------------|----|----|----|----|----|----|----|----|----|------------------|-----------------|------------------|
|          |       | A                        | B  | C  | D  | E  | F  | G  | H  | I  | J  |                  |                 |                  |
| Control  | 1     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | [Signature]      |
|          | 2     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              |                  |
|          | 3     | 0                        | 0  | 0  | 0  | 3  | 0  | 4  | 3  | 0  | 0  | 10               | 10              |                  |
|          | 4     | 3                        | 5  | 4  | 4  | 0  | 4  | 0  | 0  | 3  | 4  | 27               | 10              |                  |
|          | 5     | 0                        | 0  | 10 | 8  | 8  | 9  | 9  | 10 | 7  | 8  | 69               | 10              |                  |
|          | 6     | 17                       | 12 | 11 | 13 | 13 | 14 | 15 | 14 | 10 | 10 | 129              | 10              |                  |
|          | 7     | -                        | -  | -  | -  | -  | -  | -  | -  | -  | -  | -                | -               |                  |
|          | Total | 20                       | 17 | 25 | 25 | 24 | 27 | 28 | 27 | 20 | 22 | 235              | 10              |                  |
| 0.25 g/l | 1     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | [Signature]      |
|          | 2     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              |                  |
|          | 3     | 0                        | 0  | 0  | 0  | 4  | 0  | 4  | 0  | 0  | 0  | 8                | 10              |                  |
|          | 4     | 5                        | 4  | 5  | 5  | 0  | 4  | 0  | 5  | 4  | 4  | 36               | 10              |                  |
|          | 5     | 0                        | 0  | 10 | 9  | 10 | 9  | 7  | 9  | 9  | 8  | 71               | 10              |                  |
|          | 6     | 16                       | 13 | 14 | 12 | 13 | 12 | 14 | 13 | 10 | 11 | 128              | 10              |                  |
|          | 7     | -                        | -  | -  | -  | -  | -  | -  | -  | -  | -  | -                | -               |                  |
|          | Total | 21                       | 17 | 29 | 26 | 27 | 25 | 25 | 27 | 23 | 23 | 243              | 10              |                  |
| 0.5 g/l  | 1     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              | [Signature]      |
|          | 2     | 0                        | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                | 10              |                  |
|          | 3     | 0                        | 0  | 0  | 0  | 0  | 0  | 4  | 0  | 0  | 0  | 4                | 10              |                  |
|          | 4     | 4                        | 4  | 3  | 3  | 5  | 4  | 0  | 3  | 4  | 4  | 34               | 10              |                  |
|          | 5     | 0                        | 0  | 7  | 9  | 8  | 7  | 9  | 7  | 7  | 8  | 62               | 10              |                  |
|          | 6     | 12                       | 10 | 13 | 10 | 11 | 12 | 10 | 13 | 12 | 11 | 114              | 10              |                  |
|          | 7     | -                        | -  | -  | -  | -  | -  | -  | -  | -  | -  | -                | -               |                  |
|          | Total | 16                       | 14 | 23 | 22 | 24 | 23 | 23 | 23 | 23 | 23 | 214              | 10              |                  |

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

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



QA/QC No.: RT-120403

Start Date: 04/03/2012

| Sample  | Day   | Number of Young Produced |    |   |    |    |    |    |    |   |    | Total Live Young | No. Live Adults | Analyst Initials |
|---------|-------|--------------------------|----|---|----|----|----|----|----|---|----|------------------|-----------------|------------------|
|         |       | A                        | B  | C | D  | E  | F  | G  | H  | I | J  |                  |                 |                  |
| 1.0 g/l | 1     | 0                        | 0  | 0 | 0  | 0  | 0  | 0  | 0  | 0 | 0  | 0                | 10              | [Signature]      |
|         | 2     | 0                        | 0  | 0 | 0  | 0  | 0  | 0  | 0  | 0 | 0  | 0                | 10              |                  |
|         | 3     | 0                        | 0  | 0 | 0  | 3  | 0  | 0  | 0  | 0 | 0  | 3                | 10              |                  |
|         | 4     | 3                        | 4  | 2 | 3  | 0  | 3  | 4  | 4  | 2 | 3  | 28               | 10              |                  |
|         | 5     | 0                        | 0  | 0 | 7  | 7  | 0  | 8  | 7  | 7 | 6  | 47               | 10              |                  |
|         | 6     | 12                       | 13 | 6 | 10 | 13 | 12 | 0  | 11 | 0 | 10 | 87               | 10              |                  |
|         | 7     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                | -               |                  |
|         | Total | 15                       | 17 | 8 | 20 | 23 | 15 | 12 | 22 | 9 | 19 | 160              | 10              |                  |
| 2.0 g/l | 1     | 0                        | 0  | 0 | 0  | 0  | 0  | 0  | 0  | 0 | 0  | 10               | [Signature]     |                  |
|         | 2     | X                        | X  | 0 | 0  | 0  | 0  | X  | X  | 0 | 0  | 0                |                 | 6                |
|         | 3     | -                        | -  | 0 | 0  | 0  | 0  | -  | -  | 0 | 0  | 0                |                 | 6                |
|         | 4     | -                        | -  | 0 | 0  | 0  | 0  | -  | -  | 0 | 0  | 0                |                 | 6                |
|         | 5     | -                        | -  | 0 | 2  | 2  | 3  | -  | -  | 0 | 2  | 9                |                 | 6                |
|         | 6     | -                        | -  | 0 | 0  | 2  | 0  | -  | -  | 0 | 3  | 5                |                 | 6                |
|         | 7     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 | -                |
|         | Total | 0                        | 0  | 0 | 2  | 4  | 3  | 0  | 0  | 0 | 5  | 14               |                 | 6                |
| 4.0 g/l | 1     | X                        | X  | X | X  | X  | X  | X  | X  | X | 0  | 0                | [Signature]     |                  |
|         | 2     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | 3     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | 4     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | 5     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | 6     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | 7     | -                        | -  | - | -  | -  | -  | -  | -  | - | -  | -                |                 |                  |
|         | Total | 0                        | 0  | 0 | 0  | 0  | 0  | 0  | 0  | 0 | 0  | 0                |                 | 0                |

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

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



QA/QC No.: RT-120403

Start Date: 04/03/2012

|                   |      | DAY 1   |       | DAY 2   |       | DAY 3   |       | DAY 4   |       | DAY 5   |       | DAY 6   |       | DAY 7   |       |
|-------------------|------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|
|                   |      | Initial | Final |
| Analyst Initials: |      | J       | Z     | Z       | Z     | Z       | Z     | Z       | Z     | Z       | Z     | Z       | Z     | Z       | Z     |
| Time of Readings: |      | 1400    | 1400  | 1400    | 1400  | 1400    | 1400  | 1400    | 1400  | 1400    | 1400  | 1400    | 1400  |         |       |
| Control           | DO   | 8.3     | 8.2   | 7.9     | 8.6   | 7.8     | 8.5   | 7.9     | 8.4   | 8.5     | 8.7   | 8.3     | 8.6   | -       | -     |
|                   | pH   | 8.0     | 8.2   | 8.1     | 8.1   | 8.2     | 8.2   | 8.1     | 8.2   | 8.1     | 8.0   | 8.1     | 8.0   | -       | -     |
|                   | Temp | 24.7    | 24.7  | 24.3    | 24.3  | 24.6    | 24.7  | 24.8    | 24.7  | 24.8    | 24.4  | 24.3    | 24.5  | -       | -     |
| 0.25 g/l          | DO   | 8.4     | 8.4   | 8.2     | 8.6   | 8.4     | 8.3   | 8.3     | 8.3   | 7.9     | 8.6   | 8.3     | 8.7   | -       | -     |
|                   | pH   | 8.0     | 8.1   | 8.2     | 8.2   | 8.2     | 8.2   | 8.1     | 8.2   | 8.1     | 8.0   | 8.1     | 8.0   | -       | -     |
|                   | 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  | -       | -     |
| 0.5 g/l           | 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   | -       | -     |
|                   | pH   | 8.0     | 8.1   | 8.2     | 8.1   | 8.2     | 8.2   | 8.1     | 8.1   | 8.1     | 8.0   | 8.1     | 8.0   | -       | -     |
|                   | Temp | 24.6    | 24.9  | 24.5    | 24.2  | 24.3    | 24.8  | 24.3    | 24.8  | 24.8    | 24.3  | 24.7    | 25.2  | -       | -     |
| 1.0 g/l           | 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   | -       | -     |
|                   | pH   | 8.0     | 8.2   | 8.2     | 8.2   | 8.2     | 8.1   | 8.1     | 8.1   | 8.1     | 8.1   | 8.1     | 8.0   | -       | -     |
|                   | Temp | 24.7    | 24.7  | 24.5    | 24.5  | 24.5    | 24.7  | 24.7    | 24.6  | 24.8    | 24.7  | 24.5    | 24.5  | -       | -     |
| 2.0 g/l           | 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   | -       | -     |
|                   | pH   | 8.0     | 8.1   | 8.2     | 8.1   | 8.2     | 8.1   | 8.0     | 8.1   | 8.1     | 8.0   | 8.0     | 8.0   | -       | -     |
|                   | 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  | -       | -     |
| 4.0 g/l           | DO   | 8.5     | 8.1   | -       | -     | -       | -     | -       | -     | -       | -     | -       | -     | -       | -     |
|                   | pH   | 8.0     | 8.1   | -       | -     | -       | -     | -       | -     | -       | -     | -       | -     | -       | -     |
|                   | Temp | 24.7    | 24.5  | -       | -     | -       | -     | -       | -     | -       | -     | -       | -     | -       | -     |

Dissolved Oxygen (DO) readings are in mg/l O<sub>2</sub>; Temperature (Temp) readings are in °C.

| Additional Parameters                | Control |       |       | High Concentration |       |       |
|--------------------------------------|---------|-------|-------|--------------------|-------|-------|
|                                      | Day 1   | Day 3 | Day 5 | Day 1              | Day 3 | Day 5 |
| Conductivity (µS)                    | 309     | 319   | 316   | 6960               | 2520  | 3310  |
| Alkalinity (mg/l CaCO <sub>3</sub> ) | 69      | 67    | 67    | 68                 | 68    | 68    |
| Hardness (mg/l CaCO <sub>3</sub> )   | 90      | 87    | 88    | 90                 | 89    | 88    |

**Source of Neonates**

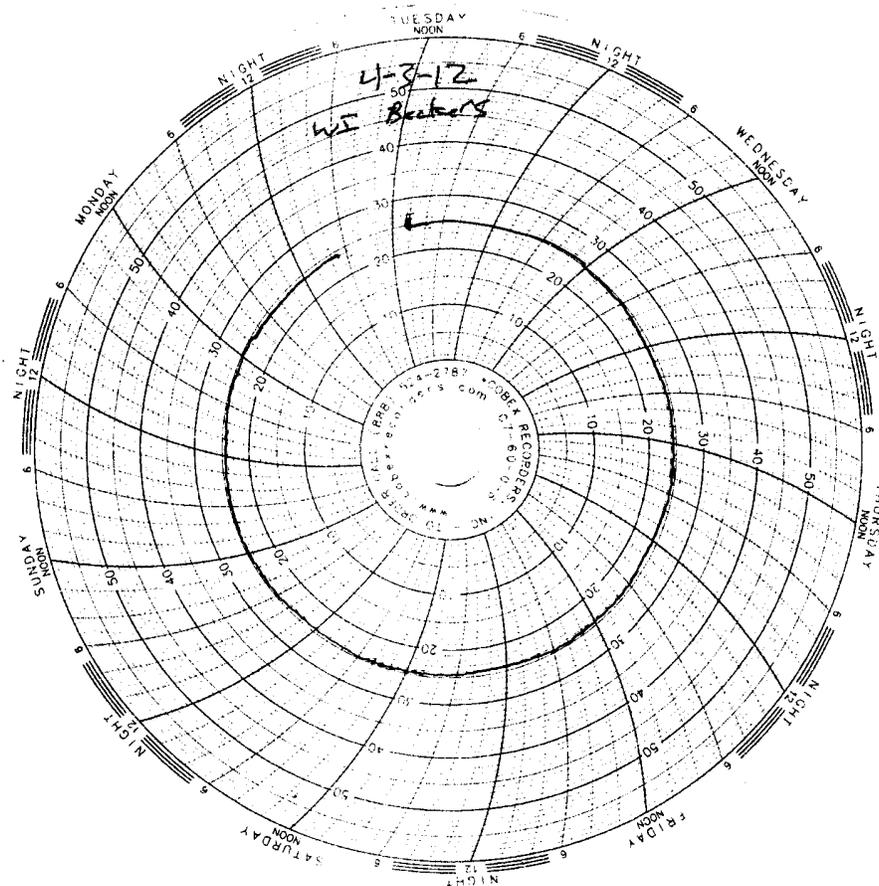
| Replicate: | A  | B  | C  | D  | E  | F  | G  | H  | I  | J  |
|------------|----|----|----|----|----|----|----|----|----|----|
| Brood ID:  | 1B | 2C | 3C | 2D | 1E | 3E | 1F | 1G | 3H | 2I |

# Test Temperature Chart

Test No: **RT-120403**

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

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



CHAIN OF CUSTODY FORM

| Client Name/Address:<br>MWH-Arcadia<br>618 Michillinda Ave, Suite 200<br>Arcadia, CA 91007<br>Test America Contact: Debby Wilson |               |                | Project:<br>Boeing-SSFL NPDES<br>Annual Outfall 008<br>GRAB<br>Stormwater at Happy Valley |                    |              | ANALYSIS REQUIRED  |                         |                        |                     |                 |                         |                  |                |       |   | Field readings:<br>(Log in and include in report Temp and pH)<br>Temp °F = 52<br>pH = 7.36<br>Time of readings = 1530<br>Comments |  |  |
|--|---------------|----------------|---|--------------------|--------------|--|-------------------------|------------------------|---------------------|-----------------|-------------------------|------------------|----------------|-------|---|---|--|--|
| Project Manager: Bronwyn Kelly<br>Sampler: <i>Rain Berry</i>   |               |                | Phone Number:<br>(626) 568-6691<br>Fax Number:<br>(626) 568-6515                          |                    |              | Acute Toxicity<br>E. coli (SM9221)<br>Fecal coliform (SM9221)<br>Cr (VI) (218.6)<br>VOCs 624 + A+A+2CVE<br>VOCs 624, Xylenes + PP<br>Oil & Grease (1664-HEM) |                         |                        |                     |                 |                         |                  |                |       |   | Human   |  |  |
| Sample Description   | Sample Matrix | Container Type | # of Cont.  | Sampling Date/Time | Preservative | Bottle #   | Oil & Grease (1664-HEM) | VOCs 624, Xylenes + PP | VOCs 624 + A+A+2CVE | Cr (VI) (218.6) | Fecal coliform (SM9221) | E. coli (SM9221) | Acute Toxicity | Human | Field readings:<br>(Log in and include in report Temp and pH) |   |  |  |
| Outfall 008  | W             | 1L Amber       | 2   | 4-13-12<br>1530    | HCl          | 1A, 1B   | X                       |                        |                     |                 |                         |                  |                |       |   |   |  |  |
| Outfall 008  | W             | VOAs           | 3   |                    | HCl          | 2A, 2B, 2C   |                         | X                      |                     |                 |                         |                  |                |       |   |   |  |  |
| Outfall 008  | W             | VOAs           | 3   |                    | None         | 3A, 3B, 3C   |                         |                        | X                   |                 |                         |                  |                |       |   |   |  |  |
| Trip Blanks  | W             | VOAs           | 3   |                    | HCl          | 4A, 4B, 4C   |                         | X                      |                     |                 |                         |                  |                |       |   |   |  |  |
| Trip Blanks  | W             | VOAs           | 3   |                    | None         | 5A, 5B, 5C   |                         | X                      |                     |                 |                         |                  |                |       |   |   |  |  |
| Outfall 008  | W             | 500 mL Poly    | 1   |                    | None         | 6  |                         |                        | X                   |                 |                         |                  |                |       |   |   |  |  |
| Outfall 008  | W             | 125 mL Poly    | 1   |                    | Na2S2O3      | 7  |                         |                        |                     | X               |                         |                  |                |       |   |   |  |  |
| Outfall 008  | W             | 125 mL Poly    | 1   |                    | Na2S2O3      | 8  |                         |                        |                     |                 | X                       |                  |                |       |   |   |  |  |
| Outfall 008  | W             | 1 Gal Cube     | 1   |                    | None         | 9  |                         |                        |                     |                 |                         | X                |                |       |   |   |  |  |
| Outfall 008  | W             | 125 mL Amber   | 1   | 4-13-12<br>1530    |              | 10   |                         |                        |                     |                 |                         |                  | X              |       |   |   |  |  |

These Samples are the Grab Portion of Outfall 008 for this storm event. Composite samples will follow and are to be added to this work order.

|  |                                  |                                      |                                |
|--|----------------------------------|--------------------------------------|--------------------------------|
| Relinquished By<br><i>Rain Berry</i>     | Date/Time:<br>4-13-2012<br>15:45 | Received By<br><i>John O'Connell</i> | Date/Time:<br>4-13-12<br>15:45 |
| Relinquished By<br><i>John O'Connell</i> | Date/Time:<br>4-13-12<br>19:00   | Received By<br><i>[Signature]</i>    | Date/Time:<br>4-13-12<br>19:00 |
| Relinquished By                          | Date/Time:                       | Received By                          | Date/Time:                     |

Turn-around time: (Check)  
 24 Hour: \_\_\_\_\_ 72 Hour: \_\_\_\_\_ 10 Day: \_\_\_\_\_  
 48 Hour: \_\_\_\_\_ 5 Day: \_\_\_\_\_ Normal:  X  
 Sample Integrity: (Check)  
 Intact:  X On Ice: \_\_\_\_\_  
 Data Requirements: (Check)  
 No Level IV: \_\_\_\_\_ All Level IV: \_\_\_\_\_ NPDES Level IV:  X



CHAIN OF CUSTODY FORM

440-8622 Page 1 of 2

| Client Name/Address:   |   | Project:  |   | ANALYSIS REQUIRED       |                        |                     |                 |                         |                    |                |          |          |  | Field readings: |  |  |
|--|---|---|---|-------------------------|------------------------|---------------------|-----------------|-------------------------|--------------------|----------------|----------|----------|--|-----------------|--|--|
| MWH-Arcadia<br>618 Michillinda Ave, Suite 200<br>Arcadia, CA 91007 |   | Boeing-SSFL NPDES<br>Annual Outfall 008<br>GRAB<br>Stormwater at Happy Valley |   | Oil & Grease (1664-HEM) | VOCs 624, Xylenes + PP | VOCs 624 + A+A+2C+E | Cr (VI) (218.6) | Fecal coliform (SM9221) | E. coli (SM9221)   | Acute Toxicity |          |          |  |                 |  | Temp °F = 52<br>pH = 7.36<br>Time of readings = 1530 |
| Project Manager: Bronwyn Kelly                                     |   | Phone Number:   |   | Sample Description      |                        | Sample Matrix       | Container Type  | # of Cont.              | Sampling Date/Time | Preservative   | Bottle # | Comments |  |                 |  |  |
| SAMPLER: <i>Rain Bow</i>   |   | (626) 568-6691  |   | Outfall 008             | W                      | 1L Amber            | 2               | 4-13-12<br>1530         | HCl                | 1A, 1B         |          |          |  |                 |  |  |
| Outfall 008  | W | VOAs  | 3 |                         |                        | HCl                 |                 | 2A, 2B, 2C              |                    |                |          |          |  |                 |  |  |
| Outfall 008  | W | VOAs  | 3 |                         |                        | None                |                 | 3A, 3B, 3C              |                    |                |          |          |  |                 |  |  |
| Trip Blanks  | W | VOAs  | 3 |                         |                        | HCl                 |                 | 4A, 4B, 4C              |                    |                |          |          |  |                 |  |  |
| Trip Blanks  | W | VOAs  | 3 |                         |                        | None                |                 | 5A, 5B, 5C              |                    |                |          |          |  |                 |  |  |
| Outfall 008  | W | 500 mL Poly   | 1 |                         |                        | None                |                 | 6                       |                    |                |          |          |  |                 |  |  |
| Outfall 008  | W | 125 mL Poly   | 1 |                         |                        | Na2S2O3             |                 | 7                       |                    |                |          |          |  |                 |  |  |
| Outfall 008  | W | 125 mL Poly   | 1 |                         |                        | Na2S2O3             |                 | 8                       |                    |                |          |          |  |                 |  |  |
| Outfall 008  | W | 1 Gal Cube  | 1 |                         |                        | None                |                 | 9                       |                    |                |          |          |  |                 |  |  |
| Outfall 008  | W | 125 mL Poly   | 1 |                         |                        | None                |                 | 10                      |                    |                |          |          |  |                 |  |  |

These Samples are the Grab Portion of Outfall 008 for this storm event. Composite samples will follow and are to be added to this work order.

|   |                            |                                     |                          |  |
|---|----------------------------|-------------------------------------|--------------------------|--|
| Relinquished By: <i>Rain Bow</i>        | Date/Time: 4-13-2012 15:45 | Received By: <i>Scott O'Connell</i> | Date/Time: 4-13-12 15:45 | Turn-around time: (Check)<br>24 Hour: <input type="checkbox"/> 72 Hour: <input type="checkbox"/> 10 Day: <input type="checkbox"/><br>48 Hour: <input type="checkbox"/> 5 Day: <input type="checkbox"/> Normal: <input checked="" type="checkbox"/> |
| Relinquished By: <i>Scott O'Connell</i> | Date/Time: 4-13-12 16:00   | Received By: <i>[Signature]</i>     | Date/Time: 4-13-12 15:45 | Sample Integrity: (Check)<br>Intact: <input checked="" type="checkbox"/> On Ice: <input type="checkbox"/>  |
| Relinquished By:                        | Date/Time: 16:46           | Received By:                        | Date/Time:               | Data Requirements: (Check)<br>No Level IV: <input type="checkbox"/> All Level IV: <input type="checkbox"/> NPDES Level IV: <input checked="" type="checkbox"/>   |

36

## Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-8620-1

**Login Number: 8620**

**List Number: 1**

**Creator: Kim, Will**

**List Source: TestAmerica Irvine**

| 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 B  |
| 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    |         |



## Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-8620-1

**Login Number: 8693**

**List Number: 1**

**Creator: Perez, Angel**

**List Source: TestAmerica Irvine**

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



## **APPENDIX G**

### **Section 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<sup>x</sup>, LP  
12269 East Vassar Drive  
Aurora, CO 80014

## I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES  
Contract Task Order: 1261.100D.00  
Sample Delivery Group: 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<br>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  $\pm$ 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.

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### Data Qualifier Reference Table

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

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**Qualification Code Reference Table**


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

**Qualification Code Reference Table Cont.**

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

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### 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<sup>x</sup> Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (8/02)*.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
  - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.
  - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.
- Calibration: Calibration criteria were met.
  - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs  $\leq 20\%$  for the 15 native compounds (calibration by isotope dilution) and  $\leq 35\%$  for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.
  - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: 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<sup>X</sup> 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  $r^2$  values were  $\geq 0.995$  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 method-established 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 laboratory-established 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<sup>X</sup> 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 laboratory-established QC limits.
- **Laboratory Duplicates:** No laboratory duplicate analyses were performed on the sample in this SDG.
- **Matrix Spike/Matrix Spike Duplicate:** No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- **Sample Result Verification:** Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer

was able to clearly determine bias, detected results were qualified as either “J+” or “J-”; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

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

# Validated Sample Result Forms 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                    | B                |
| 1,2,3,4,7,8,9-HpCDF | 55673-89-7 | ND           | 0.000050 | 0.0000005 | ug/L         | J B           | U                    | B                |
| 1,2,3,4,7,8-HxCDD   | 39227-28-6 | ND           | 0.000050 | 0.0000004 | ug/L         | J Q B         | U                    | B                |
| 1,2,3,4,7,8-HxCDF   | 70648-26-9 | ND           | 0.000050 | 0.0000000 | ug/L         | J Q B         | U                    | B                |
| 1,2,3,6,7,8-HxCDD   | 57653-85-7 | ND           | 0.000050 | 0.0000004 | ug/L         | J 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                    | B                |
| 1,2,3,7,8,9-HxCDF   | 72918-21-9 | ND           | 0.000050 | 0.0000000 | ug/L         | J B           | U                    | B                |
| 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                    | B                |
| 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         | J 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         | B             |                      |                  |
| OCDF                | 39001-02-0 | ND           | 0.00010  | 0.0000003 | ug/L         | J B           | U                    | B                |
| Total HpCDD         | 37871-00-4 | 0.00017      | 0.000050 | 0.0000005 | ug/L         | B             |                      |                  |
| 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         | J 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     |

*Analysis Method 245.1*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 009 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8443-1            | <b>Sample Date:</b> | 4/11/2012 8:31:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Mercury                 | 7439-97-6             | ND                  | 0.20                 | 0.10                     | ug/L                |                      | U                           |                         |
| Mercury, Dissolved      | 7439-97-6             | ND                  | 0.20                 | 0.10                     | ug/L                |                      | U                           |                         |

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*Analysis Method Gamma Spec K-40 CS-137*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 009 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8443-1            | <b>Sample Date:</b> | 4/11/2012 8:31:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Cesium-137              | 10045973              | 0.386               | 20                   | 4.96                     | pCi/L               | U                    | U                           |                         |
| Potassium-40            | 13966002              | 1.85                | 25                   | 57.4                     | pCi/L               | U                    | U                           |                         |

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*Analysis Method Gross Alpha and Beta*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 009 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8443-1            | <b>Sample Date:</b> | 4/11/2012 8:31:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Gross Alpha             | 12587461              | 1.23                | 3                    | 0.347                    | pCi/L               | J                    | J                           | DNQ                     |
| Gross Beta              | 12587472              | 2.29                | 4                    | 1.08                     | pCi/L               | J                    | J                           | DNQ                     |

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*Analysis Method Radium 226*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 009 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8443-1            | <b>Sample Date:</b> | 4/11/2012 8:31:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Radium-226              | 13982633              | 0.126               | 1                    | 0.509                    | pCi/L               | U                    | U                           |                         |

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*Analysis Method Radium 228*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 009 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8443-1            | <b>Sample Date:</b> | 4/11/2012 8:31:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Radium-228              | 15262201              | 0.118               | 1                    | 0.378                    | pCi/L               | U                    | U                           |                         |

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*Analysis Method SM 2540D*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 009 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8443-1            | <b>Sample Date:</b> | 4/11/2012 8:31:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Total Suspended Solids  | STL00161              | 16                  | 10                   | 10                       | mg/L                |                      |                             |                         |

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*Analysis Method Strontium 90*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 009 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8443-1            | <b>Sample Date:</b> | 4/11/2012 8:31:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Strontium-90            | 10098972              | -0.156              | 2                    | 0.943                    | pCi/L               | U                    | U                           |                         |

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*Analysis Method Tritium*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 009 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8443-1            | <b>Sample Date:</b> | 4/11/2012 8:31:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Tritium                 | 10028178              | -72.3               | 500                  | 176                      | pCi/L               | U                    | U                           |                         |

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*Analysis Method Uranium, Combined*

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|                         |                       |                     |                      |                          |                     |                      |                             |                         |
|-------------------------|-----------------------|---------------------|----------------------|--------------------------|---------------------|----------------------|-----------------------------|-------------------------|
| <b>Sample Name</b>      | Outfall 009 Composite | <b>Matrix Type:</b> | Water                | <b>Validation Level:</b> | IV                  |                      |                             |                         |
| <b>Lab Sample Name:</b> | 440-8443-1            | <b>Sample Date:</b> | 4/11/2012 8:31:00 PM |                          |                     |                      |                             |                         |
| <b>Analyte</b>          | <b>CAS No</b>         | <b>Result Value</b> | <b>RL</b>            | <b>MDL</b>               | <b>Result Units</b> | <b>Lab Qualifier</b> | <b>Validation Qualifier</b> | <b>Validation Notes</b> |
| Uranium, Total          |                       | 0.074               | 1                    | 0.019                    | pCi/L               | J                    | J                           | DNQ                     |

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