

APPENDIX G

Section 15

Outfall 006, February 6, 2009

MEC^X Data Validation Report



DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ISB0719

Prepared by

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

I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES
 Contract Task Order: 1261.100D.00
 Sample Delivery Group: ISB0719
 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 006	ISB0719-01	D9B100246-001, 31401-001, F9B100170-001, CSB0306-001	Water	02/06/09 1050	200.7, 200.7 (Diss), 245.1, 245.1 (Diss), 525.2, 900.0, 901.1, 903.0, 904.0, 905.0, 906.0, 908.0, 1613B, SM2540D, SM4500

II. Sample Management

No anomalies were observed regarding sample management. The samples were received at TestAmerica-Irvine and TestAmerica-St. Louis within the temperature limit of 4 \pm 2°C. The samples were received at Vista and TestAmerica-Denver below the control limit; however, the samples were not noted to be damaged or frozen. According to the case narrative for this SDG, the samples were received intact at all laboratories. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the sample was couriered to TestAmerica-Irvine, custody seals were not required. No custody seals were present on the coolers upon arrival at Vista. Custody seal were present and intact upon arrival at TestAmerica-Denver, TestAmerica-St. Louis, and Vista. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

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

Qualification Code Reference Table

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

Qualification Code Reference Table Cont.

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

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: K. Shadowlight

Date Reviewed: March 19, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (9/05)*.

- 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 not analyzed prior to the initial calibration sequence or at the beginning of each analytical sequence; however, the first and last eluting congeners and isomer specificity compounds were added to the midpoint of the initial calibration and to the continuing calibration standards. 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 16 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The method blank had no target compound detects above the estimated detection limit (EDL).

- Blank Spikes and Laboratory Control Samples: OPR recoveries were within the acceptance criteria listed in Table 6 of Method 1613.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.
- Internal Standards Performance: The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detect between the EDL and the reporting limit (RL) was qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Nondetects are valid to the EDL.

B. EPA METHODS 200.7 and 245.1—Metals and Mercury

Reviewed By: P. Meeks

Date Reviewed: March 20, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Methods 2007 and 245.1*, and the *National Functional Guidelines for Inorganic Data Review (10/04)*.

- Holding Times: The analytical holding times, 180 days for ICP and metals and 28 days for mercury, were met.
- Tuning: Not applicable to these methods.
- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were ≥ 0.995 . Initial and continuing calibration recoveries were within 90-110% for the ICP metals and 85-115% for mercury. The CRI and CRA and check standards were recovered within the control limits of 70-130%.

- **Blanks:** Arsenic was detected in the total method blank at 7.21 µg/L; therefore, total arsenic detected in the sample was qualified as nondetected, “U,” at the level of contamination. Mercury was detected in the method blank at 0.036 µg/L; therefore total and dissolved mercury detected in the sample were qualified as nondetected, “U,” at the reporting limit. There were no other applicable detects in the method blanks or CCBs.
- **Interference Check Samples:** Recoveries were within the method-established control limits.
- **Blank Spikes and Laboratory Control Samples:** The recoveries were within the laboratory-established QC limits.
- **Laboratory Duplicates:** No laboratory duplicate analysis was performed on the sample in this SDG.
- **Matrix Spike/Matrix Spike Duplicate:** A matrix spike analysis was performed on the sample in this SDG for all analytes except mercury. Aluminum was recovered above the control limit at 195%; therefore, total and dissolved aluminum in the sample were qualified as estimated, “J.”
- **Serial Dilution:** No serial dilution analyses were performed on the sample in this SDG.
- **Internal Standards Performance:** Not applicable to these methods.
- **Sample Result Verification:** Calculations were verified and the sample results reported on the sample result summaries were verified against the raw data. No transcription errors or calculation errors were noted. Detects reported below 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 608—PCBs

Reviewed By: K. Shadowlight

Date Reviewed: March 21, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for Organochlorine Pesticides/PCBs by GC (DVP-4, Rev. 0)*, *EPA Methods 608*, and the *National Functional Guidelines for Organic Data Review (2/99)*.

- 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.
- Calibration: The initial calibration had average %RSDs of $\leq 10\%$ or $r^2 \geq 0.995$. As there were no confirmed detects, the confirmation column %Ds were not evaluated. The ICV and CCVs bracketing the sample analysis had %Ds within the QC limit of $\leq 15\%$.
- Blanks: The method blank had no target compound detects above the MDL.
- Blank Spikes and Laboratory Control Samples: Recoveries and RPDs for the blank spike/blank spike duplicate pair 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 for the sample in this SDG. Method accuracy and precision was evaluated based on the blank spike/blank spike duplicate 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.
- Compound Identification: Compound identification was verified. The laboratory analyzed for PCBs by EPA Method 608. Review of the sample chromatograms and retention times indicated no problems with target compound identification.
- Compound Quantification and Reported Detection Limits: Compound quantification was verified from the raw data. The reporting limits were supported by the lower level of the initial calibration. 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: March 18, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174, and the National Functional Guidelines for Inorganic Data Review (10/04)*.

- **Holding Times:** The tritium sample was analyzed within 180 days of collection. The aliquots for gross alpha and gross beta were prepared beyond the five-day holding time for unpreserved samples; therefore, the detected results for these analytes were qualified as estimated, "J," for detects and, "UJ," for nondetects. All remaining aliquots were prepared within the five-day holding time for unpreserved samples.
- **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, nondetected gross alpha in the sample was qualified as estimated, "UJ." The gross beta detector efficiency was greater than 20%.

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. The tritium detector efficiency for the sample was at least 20% and was considered acceptable. The strontium, radium-226, and radium-228 chemical yields 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.
- **Blank Spikes and Laboratory Control Samples:** The recoveries and the strontium-90, radium-226, and radium-228 RPDs were within laboratory-established control limits.
- **Laboratory Duplicates:** No duplicate analyses were performed on the sample in this SDG.
- **Matrix Spike/Matrix Spike Duplicate:** No matrix spike or MS/MSD analyses were performed on the sample in this SDG. Method accuracy and/or precision was evaluated based on 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. Total uranium, normally reported in aqueous units, was converted to pCi/L using a conversion factor for naturally occurring uranium. Detects reported below the reporting limit were

qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA.

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

E. EPA METHOD 525.2—Semivolatile Organic Compounds (SVOCs)

Reviewed By: P. Meeks

Date Reviewed: March 23, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for Semivolatile Organics (DVP-3, Rev. 0)*, *EPA Method 525.2*, 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 24 hours of collection and analyzed within 30 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: Calibration criteria were met. The diazinon initial calibration average RRF was ≥ 0.05 and $\%RSD \leq 30\%$. The continuing calibration RRF for diazinon was ≥ 0.05 and recovery was within the method QC limits of 70-130%. The reviewer could not duplicate the chlorpyrifos initial calibration; however, the calculated average RRF was ≥ 0.05 and $\%RSD \leq 30\%$. Additionally the calculated chlorpyrifos continuing calibration RRF was ≥ 0.05 and the recovery was within the method QC limits of 70-130%.
- Blanks: The method blank had no applicable target compound detects above the MDL.
- Blank Spikes and Laboratory Control Samples: The recoveries were within laboratory-established QC limits.
- Surrogate Recovery: Recoveries were within laboratory-established QC limits.
- 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.

- **Field QC Samples:** Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - **Field Blanks and Equipment Rinsates:** This SDG had no identified field blank or equipment rinsate samples.
 - **Field Duplicates:** There were no field duplicate samples identified for this SDG.
- **Internal Standards Performance:** The internal standard area counts and retention times were within the method control limits established by the continuing calibration standards of $\pm 30\%$.
- **Compound Identification:** Compound identification was verified. The laboratory analyzed for chlorpyrifos and diazinon by Method 525.2. 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. Reported nondetects are valid to the reporting limit.
- **Tentatively Identified Compounds:** TICs were not reported by the laboratory for this analysis.
- **System Performance:** Review of the raw data indicated no problems with system performance.

F. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: March 20, 2009

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *EPA Method 335.2, Standard Method 4500-CN-C,E*, and the *National Functional Guidelines for Inorganic Data Review (07/02)*.

- **Holding Times:** The analytical holding time, 14 days from collection, was met.
- **Calibration:** Calibration criteria were met. Initial calibration r^2 value was ≥ 0.995 and all initial and continuing calibration recoveries were within 90-110%.
- **Blanks:** Method blanks and CCBs had no detects.

- 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. Any detects reported below 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.

Sample ID: **ISB0719-01** (outfall 006)

EPA Method 1613

Client Data
 Name: Test America-Irvine, CA
 Project: ISB0719
 Date Collected: 6-Feb-09
 Time Collected: 1050

Sample Data
 Matrix: Aqueous
 Sample Size: 1.05 L

Laboratory Data
 Lab Sample: 31401-001 Date Received: 10-Feb-09
 QC Batch No.: 1876 Date Extracted: 11-Feb-09
 Date Analyzed DB-5: 13-Feb-09 Date Analyzed DB-225: N/A

Analyte	Conc. (ug/L)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.000000436			IS 13C-2,3,7,8-TCDD	88.2	25 - 164	
1,2,3,7,8-PeCDD	ND	0.00000123			13C-1,2,3,7,8-PeCDD	78.3	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.00000137			13C-1,2,3,4,7,8-HxCDD	82.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.00000143			13C-1,2,3,6,7,8-HxCDD	75.7	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.00000135			13C-1,2,3,4,6,7,8-HpCDD	90.5	23 - 140	
1,2,3,4,6,7,8-HpCDD	ND	0.00000227			13C-OCDD	82.1	17 - 157	
OCDD	0.0000210			J	13C-2,3,7,8-TCDF	95.2	24 - 169	
2,3,7,8-TCDF	ND	0.000000492			13C-1,2,3,7,8-PeCDF	78.1	24 - 185	
1,2,3,7,8-PeCDF	ND	0.000000506			13C-2,3,4,7,8-PeCDF	78.4	21 - 178	
2,3,4,7,8-PeCDF	ND	0.000000496			13C-1,2,3,4,7,8-HxCDF	84.1	26 - 152	
1,2,3,4,7,8-HxCDF	ND	0.000000698			13C-1,2,3,6,7,8-HxCDF	77.5	26 - 123	
1,2,3,6,7,8-HxCDF	ND	0.000000685			13C-2,3,4,6,7,8-HxCDF	97.9	28 - 136	
2,3,4,6,7,8-HxCDF	ND	0.000000631			13C-1,2,3,7,8,9-HxCDF	79.5	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.00000116			13C-1,2,3,4,6,7,8-HpCDF	79.8	28 - 143	
1,2,3,4,6,7,8-HpCDF	ND	0.00000118			13C-1,2,3,4,7,8,9-HpCDF	86.7	26 - 138	
1,2,3,4,7,8,9-HpCDF	ND	0.00000138			13C-OCDF	82.7	17 - 157	
OCDF	ND	0.00000133			CRS 37Cl-2,3,7,8-TCDD	90.6	35 - 197	
Totals								
Total TCDD	ND	0.000000436						
Total PeCDD	ND	0.00000123						
Total HxCDD	ND	0.00000138						
Total HpCDD	ND	0.00000227						
Total TCDF	ND	0.000000492						
Total PeCDF	ND	0.000000501						
Total HxCDF	ND	0.000000794						
Total HpCDF	ND	0.00000128						

Footnotes

- a. Sample specific estimated detection limit.
- b. Estimated maximum possible concentration.
- c. Method detection limit.
- d. Lower control limit - upper control limit.

LEVEL IV

Analyst: JMH

Approved By: Martha M. Maier 20-Feb-2009 10:08

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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

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

Project ID: Annual Outfall 006

Report Number: ISB0719

Sampled: 02/06/09
Received: 02/06/09

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0719-01 (Outfall 006 - Water) - cont.					Sampled: 02/06/09				
Reporting Units: mg/l									
Hardness as CaCO3	SM2340B	[CALC]	N/A	0.33	22	1	02/09/09	02/14/09	
Boron	EPA 200.7	9B09073	0.020	0.050	0.064	1	02/09/09	02/16/09	
Calcium	EPA 200.7	9B09073	0.050	0.10	6.5	1	02/09/09	02/14/09	
Iron	EPA 200.7	9B09073	0.015	0.040	0.80	1	02/09/09	02/14/09	
Magnesium	EPA 200.7	9B09073	0.012	0.020	1.4	1	02/09/09	02/14/09	

LEVEL IV

TestAmerica Irvine

Joseph Doak
Project Manager

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

Project ID: Annual Outfall 006

Report Number: ISB0719

Sampled: 02/06/09
 Received: 02/06/09

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0719-01 (Outfall 006 - Water) - cont.					Sampled: 02/06/09				
Reporting Units: ug/l									
Aluminum	EPA 200.7	9B09073	40	50	920	1	02/09/09	02/16/09	M1
Arsenic	EPA 200.7	9B09073	7.0	10	8.6	1	02/09/09	02/14/09	B, J
Antimony	EPA 200.8	9B09075	0.20	2.0	0.58	1	02/09/09	02/10/09	J
Beryllium	EPA 200.7	9B09073	0.90	2.0	ND	1	02/09/09	02/14/09	
Chromium	EPA 200.7	9B09073	2.0	5.0	ND	1	02/09/09	02/14/09	
Nickel	EPA 200.7	9B09073	2.0	10	2.2	1	02/09/09	02/14/09	J
Selenium	EPA 200.7	9B09073	8.0	10	ND	1	02/09/09	02/14/09	
Silver	EPA 200.7	9B09073	6.0	10	ND	1	02/09/09	02/14/09	
Cadmium	EPA 200.8	9B09075	0.11	1.0	ND	1	02/09/09	02/10/09	
Vanadium	EPA 200.7	9B09073	3.0	10	ND	1	02/09/09	02/14/09	
Zinc	EPA 200.7	9B09073	6.0	20	ND	1	02/09/09	02/14/09	
Copper	EPA 200.8	9B09075	0.75	2.0	2.1	1	02/09/09	02/10/09	
Lead	EPA 200.8	9B09075	0.30	1.0	0.74	1	02/09/09	02/10/09	J
Thallium	EPA 200.8	9B09075	0.20	1.0	ND	1	02/09/09	02/10/09	

LEVEL IV

*Analysis not validated

TestAmerica Irvine
 Joseph Doak
 Project Manager

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MWH-Pasadena/Boeing 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Attention: Bronwyn Kelly	Project ID: Annual Outfall 006 Report Number: ISB0719	Sampled: 02/06/09 Received: 02/06/09
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DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0719-01 (Outfall 006 - Water) - cont.					Sampled: 02/06/09				
Reporting Units: mg/l									
Hardness as CaCO3	SM2340B-Diss	[CALC]	N/A	0.33	20	1	02/09/09	02/11/09	
Boron	EPA 200.7-Diss	9B09083	0.020	0.050	0.054	1	02/09/09	02/11/09	
Calcium	EPA 200.7-Diss	9B09083	0.050	0.10	6.0	1	02/09/09	02/11/09	
Iron	EPA 200.7-Diss	9B09083	0.015	0.040	0.11	1	02/09/09	02/11/09	
Magnesium	EPA 200.7-Diss	9B09083	0.012	0.020	1.2	1	02/09/09	02/11/09	

LEVEL IV

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

Project ID: Annual Outfall 006

Report Number: ISB0719

Sampled: 02/06/09
Received: 02/06/09

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0719-01 (Outfall 006 - Water) - cont.					Sampled: 02/06/09				
Reporting Units: ug/l									
Aluminum ^{J/Q}	EPA 200.7-Diss	9B09083	40	50	160	1	02/09/09	02/11/09	
Arsenic U	EPA 200.7-Diss	9B09083	7.0	10	ND	1	02/09/09	02/11/09	
Antimony *	EPA 200.8-Diss	9B12130	0.20	2.0	0.41	1	02/12/09	02/13/09	J
Beryllium U	EPA 200.7-Diss	9B09083	0.90	2.0	ND	1	02/09/09	02/11/09	
Chromium ↓	EPA 200.7-Diss	9B09083	2.0	5.0	ND	1	02/09/09	02/11/09	
Nickel ↓	EPA 200.7-Diss	9B09083	2.0	10	ND	1	02/09/09	02/11/09	
Selenium ↓	EPA 200.7-Diss	9B09083	8.0	10	ND	1	02/09/09	02/11/09	
Silver ↓	EPA 200.7-Diss	9B09083	6.0	10	ND	1	02/09/09	02/11/09	
Cadmium *	EPA 200.8-Diss	9B12130	0.11	1.0	ND	1	02/12/09	02/13/09	
Vanadium U	EPA 200.7-Diss	9B09083	3.0	10	ND	1	02/09/09	02/11/09	
Zinc U	EPA 200.7-Diss	9B09083	6.0	20	ND	1	02/09/09	02/11/09	
Copper *	EPA 200.8-Diss	9B12130	0.75	2.0	1.0	1	02/12/09	02/13/09	J
Lead ↓	EPA 200.8-Diss	9B12130	0.30	1.0	ND	1	02/12/09	02/13/09	
Thallium ↓	EPA 200.8-Diss	9B12130	0.20	1.0	ND	1	02/12/09	02/13/09	C

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Report Number: ISB0719

Sampled: 02/06/09
Received: 02/06/09

MCAWW 245.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0719-01 (Outfall 006 - Water) - cont.					Sampled: 02/06/09				
Reporting Units: ug/L									
Mercury <i>V/B</i>	MCAWW 245.1	9043305	0.027	0.2	0.047	1	02/12/09	02/12/09	J, Ba

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Project ID: Annual Outfall 006

Report Number: ISB0719

Sampled: 02/06/09
Received: 02/06/09

MCAWW 245.1-DISS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0719-01 (Outfall 006 - Water) - cont.					Sampled: 02/06/09				
Reporting Units: ug/L									
Mercury <i>U/B</i>	MCAWW 245.1-DISS	9043330	0.027	0.2	0.041	1	02/12/09	02/12/09	J, Ba

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 Attention: Bronwyn Kelly

Project ID: Annual Outfall 006

Report Number: ISB0719

Sampled: 02/06/09
 Received: 02/06/09

TOTAL PCBS (EPA 608)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0719-01 (Outfall 006 - Water) - cont.					Sampled: 02/06/09				
Reporting Units: ug/l									
Aroclor 1016	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1221	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1232	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1242	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1248	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1254	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Aroclor 1260	EPA 608	9B12048	0.24	0.47	ND	0.943	02/12/09	02/12/09	
Surrogate: Decachlorobiphenyl (45-120%)					98 %				

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Outfall 006

TestAmerica Irvine

Client Sample ID: ISB0719-01

Radiochemistry

Lab Sample ID: F9B100170-001
 Work Order: K603K
 Matrix: WATER

Date Collected: 02/06/09 1050
 Date Received: 02/10/09 0900

Parameter	Result	Qual	Total Uncert. (2 σ+/-)	RL	mdc	Prep Date	Analysis Date
Gamma Cs-137 & Hits by EPA 901.1 MOD							
Cesium 137 U	-0.4	U	6.5	20.0	13	02/11/09	02/26/09
Potassium 40 U	-50	U	230		250	02/11/09	02/26/09
Gross Alpha/Beta EPA 900							
Gross Alpha U/J/C,H	1.3	U	1.0	3.0	1.5	02/12/09	02/16/09
Gross Beta J/H,DNQ	3.01	J	0.90	4.00	1.1	02/12/09	02/16/09
Radium 226 by EPA 903.0 MOD							
Radium (226) U	0.09	U	0.15	1.00	0.26	02/10/09	03/06/09
Radium 228 by GFPC EPA 904 MOD							
Radium 228 U	0.23	U	0.37	1.00	0.62	02/10/09	03/06/09
TRITIUM (Distill) by EPA 906.0 MOD							
Tritium U	-120	U	180	500	340	02/28/09	03/06/09
SR-90 BY GFPC EPA-905 MOD							
Strontium 90 U	0.77	U	0.53	3.00	0.82	02/10/09	02/26/09
Total Uranium by KPA ASTM 5174-91							
Total Uranium U	0.130	U	0.014	0.677	0.21	02/10/09	03/08/09

LEVEL IV

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

LOT# F9B100170 greater than sample detection limit but less than stated reporting limit.

U Result is less than the sample detection limit.

MWH-Pasadena/Boeing
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Project ID: Annual Outfall 006

Report Number: ISB0719

Sampled: 02/06/09
Received: 02/06/09

ORGANIC COMPOUNDS BY GC/MS (EPA 525.2)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0719-01 (Outfall 006 - Water) - cont.					Sampled: 02/06/09				
Reporting Units: ug/l									
Chlorpyrifos U	EPA 525.2	C9B0701	N/A	1.0	ND	0.99	02/07/09	02/07/09	
Diazinon U	EPA 525.2	C9B0701	N/A	0.25	ND	0.99	02/07/09	02/07/09	
Surrogate: 1,3-Dimethyl-2-nitrobenzene (70-130%)					106 %				
Surrogate: Triphenylphosphate (70-130%)					109 %				
Surrogate: Perylene-d12 (70-130%)					92 %				

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Project ID: Annual Outfall 006

Report Number: ISB0719

Sampled: 02/06/09
 Received: 02/06/09

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ISB0719-01 (Outfall 006 - Water) - cont.					Sampled: 02/06/09				
Reporting Units: mg/l									
Chloride *	EPA 300.0	9B06069	0.25	0.50	12	1	02/06/09	02/07/09	
Total Cyanide	SM4500-CN-C,E	9B09095	0.0022	0.0050	0.0096	1	02/09/09	02/09/09	
Fluoride	SM 4500-F-C	9B16034	0.020	0.10	0.27	1	02/16/09	02/16/09	B
Nitrate/Nitrite-N	EPA 300.0	9B06069	0.15	0.26	4.6	1	02/06/09	02/07/09	
Sulfate	EPA 300.0	9B06069	0.20	0.50	8.6	1	02/06/09	02/07/09	
Total Dissolved Solids	SM2540C	9B11043	10	10	140	1	02/11/09	02/11/09	
Total Suspended Solids	SM 2540D	9B12141	1.0	10	ND	1	02/12/09	02/12/09	

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